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TRANSACTIONS

OF

THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION LONDON

COMPRISING THE REPORT OF THE PROCEEDINGS FOR

1898 & 1899.

LONDON.

1900.

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Life Assurance Medical Officers' Association,

LONDON.

FOUNDED 1893.

Presidents of the Association:

ELECTED.

1893.—J. E. Pollock, M.D.
1895.—Sir Richard Douglas-Powell, Bart., M.D.
1897.—Sir Hermann Weber, M.D.
1900.—C. Theodore Williams, M.D.

OFFICERS AND COUNCIL FOR 1900.

President: C. THEODORE WILLIAMS, M.D.

Vice-Presidents: G. Vivian Poore, M.D.; G. A. Heron, M.D., D.P.H.

Treasurer: G. A. Heron, M.D., D.P.H., 57, Harley Street, London, W.

Members of Council:

Sir Hugh Beevor, Bart., M.D.
Sir R. Douglas-Powell, Bart., M.D.
Sir Dyce Duckworth, M.D., LL.D.
F. de Havilland Hall, M.D.
Thomas Harris, M.D.
C. E. Hoar, M.D.
T. Glover Lyon, M.D.
F. G. Penrose, M.D.
J. E. Pollock, M.D.
Sir Hermann Weber, M.D.

Hon Secs.:

Hector Mackenzie, M.D., 59, Welbeck Street, London, W.
A. T. Davies, M.D., 23, Finsbury Square, London, E.C.

LIST OF MEMBERS OF THE ASSOCIATION

Revised to February, 1900.

ELECTED.

O.M.—Anderson, Professor M'Call, M.D., Glasgow, Scottish Imperial. (c. 1894–95.)
O.M.—Ball, J. B., M.D., London, Rock.
O.M.—Barnes, Fancourt, M.D., London, Prudential.
1895.—Barrett, Howard, M.R.C.S., &c., London, Star.
O.M.—Beale, Lionel, M.B., F.R.S., London, Clerical, Medical and General.
O.M.—Beevor, Sir Hugh R., Bart., M.D., London, Norwich Union. (c. 1898– .)
O.M.—Biss, C. Y., M.A., M.D., London, Colonial Mutual.

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ELECTED.

1896.—Bloxam, J. Astley, F.R.C.S., London, Clerical, Medical and General.
O.M.—Bond, W. A., M.A., M.D., D.P.H., London.
O.M.—Brown, F. Gordon, F.R.C.S., London, Gresham.
O.M.—Buchanan, Arthur, M.D., Chatham.
O.M.—Burnet, R. W., M.D., London, London Life. (c. 1894–98.)
O.M.—Caddy, A., F.R.C.S., Calcutta.
1899.—Carruthers, S. W., M.D., Mutual of New York.
1898.—Chaplin, Arnold, M.D., Marine and General.
1895.—Chapman, C. W., M.D., London.
O.M.—Coulter, William, M.D., Calcutta.
O.M.—Courtney, G., M.D., Ramsgate.
1895.—Crosby, Herbert, M.A., M.D., London.
O.M.—Crosby, Alderman T. Boor, M.D., London, Pelican, Scottish Provident, &c. (c. 1894–95, v.p. 1896, c. 1897.)
O.M.—Davies, A. T., M.D., London, Westminster and General, North British and Mercantile. (c. 1899, s. 1900.)
1899.—Dawson, Bertrand, M.D., Imperial.
1896.—Duckworth, Sir Dyce, M.D., LL.D., London, Law Life. (c. 1900.)
1895.—Finlay, A., L.S.A., &c., London.
1895.—Fleming, W. J., M.D., Glasgow, Scottish Amicable.
1896.—Foster, Sir B. Walter, M.D., D.C.L., Clerical, Medical and General.
O.M.—Fox, T. Colcott, B.A., M.B., London, Mutual of New York. (c. 1897–98.)
O.M.—Fox, R. Hingston, M.D., London, United Kingdom Temperance. (c. 1896–99.)
O.M.—Fraser, Professor T. R., M.D., F.R.S., Edinburgh, Standard.
O.M.—Glynn, T. R., M.D., Liverpool, Royal.
1896.—Gould, A. Pearce, M.S., London, British Equitable.
O.M.—Hall, F. de Havilland, M.D., London, Rock. (c. 1894–1900.)
1894.—Harris, T., M.D., Manchester. (c. 1900.)
1898.—Haslip, G. E., M.D., D.P.H., London.
1898.—Hawkins, F. M., M.D., London, Union.
O.M.—Heron, G. A., M.D., D.P.H., London, Mutual of Australasia. (c. 1894–99, v. p. 1900, t. 1900.)
O.M.—Hoar, C. E., M.D., Maidstone, United Kent. (c. 1896, v.p. 1897–98, c. 1898– .)
O.M.—Hodgson, G. G., M.R.C.S., Chertsey.
1898.—Hoole, Henry, M.D., London, Royal.
1896.—Howitt, G. G., M.D., London, Colonial Mutual.
O.M.—Hughes, R. H., M.A., M.D., Plymouth.
O.M.—Jalland, W. H., F.R.C.S., York, Yorkshire Insurance Co.
O.M.—Johnston, J., M.D., London, Standard Life.
O.M.—Kingsbury, George C., M.A., M.D., Blackpool.
O.M.—Lichtenberg, G., M.D., London, New York Life.
1898.—Light, E. M., M.A., M.D., London, Prudential.
1900.—Lister, T. D., M.D.
O.M.—Little, J., M.D., Dublin.
O.M.—Lubbock, M., M.D., London, Royal Exchange.
O.M.—Lyon, T. Glover, M.A., M.D., London, National Mutual. (s. 1894–97, v. p. 1898–99, c. 1900.)
O.M.—Mackenzie, Hector, M.A., M.D., London, British Empire. (c. 1894–95, s. 1896– .)
1898.—Maddick, E. Distin, F.R.C.S.E., London.
O.M.—Molloy, L. G., M.A., M.D., Blackpool.
O.M.—Moore, W., M.D., Dublin, Standard.

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ELECTED.

1895.—Morris, Malcolm, F.R.C.S.E., London, Ocean Accident.
O.M.—Muirhead, C., M.D., Edinburgh, Scottish Widows. (C. 1899.)
O.M.—Murray, H. Montague, M.D., London, Guardian. (C. 1896–97.)

O.M.—Ogilvie, Leslie, M.D., B.Sc. London, Scottish Life.
1895.—Oliver, Thomas, M.A., M.D., Newcastle-on-Tyne.
1899.—Owen, Isambard, M.D., Eagle.

O.M.—Payne, J. F., M.D., London, Economic. (C. 1898–99.)
O.M.—Penrose, F. G., M.D., London, Westminster and General. (C. 1900)
1899.—Pike, Thelwell, M.D.
O.M.—Pitt, G. Newton, M.A., M.D., London, Alliance. (C. 1894–95.)
O.M.—Playfair, J., M.D., Edinburgh, North British and Mercantile.
O.M.—Pollock, J. E., M.D., London, Imperial, London and Lancashire, &c. (P. 1894–95, C. 1896– .)
O.M.—Poore, G. Vivian, M.D., London, Law Union and Crown. (C. 1894–98, V.P. 1899–1900.)
O.M.—Potter, G. W., M.D., London, Scottish Metropolitan, London Assurance.
O.M.—Powell, Sir R. Douglas-, Bart., M.D., London, Clerical, Medical and General. (V.P. 1894–95, P. 1896–97, C. 1898–1900.)

1899.—Rabagliati, A., M.D., Bradford.
O.M.—Ransom, W. B., M.A., M.D., Nottingham.
O.M.—Risdon, W. E., M.D., London, Sun.
O.M.—Ritchie, J., M.D., Edinburgh, Scottish Metropolitan.

O.M.—Shillitoe, Buxton, F.R.C.S., London, Atlas, London and Lancashire, &c.
O.M.—Sinclair, R., M.D., Dundee.
O.M.—Smith, Sir Thomas, Bart., F.R.C.S., London, Clerical, Medical and General.
O.M.—Stephenson, F. L., M.B., Woolwich.
O.M.—Strother, W. H. H., M.R.C.S., Sheerness.
O.M.—Symonds, H. P., F.R.C.S., &c., Oxford.

O.M.—Taylor, Seymour, M.D., London, Equitable.
1896.—Tennent, Gavin P., M.D., Glasgow, City of Glasgow.
O.M.—Thin, George, M.D., London, Marine and General.
O.M.—Thompson, E. Symes, M.D., London, Equity and Law, Palatine, &c. (C. 1894–5, V. P. 1896.)
O.M.—Thomson, P. J., M.R.C.S., L.R.C.P., Brussels.

O.M.—Vernon, H. H., M.D., Southport.

1899.—Weber, F. Parkes, M.D., North British and Mercantile.
O.M.—Weber, Sir Hermann, M.D., London, North British and Mercantile. (V. P. 1897, P. 1898–99, C. 1900.)
O.M.—West, Samuel, M.A., M.D., London, Provident Clerks. (C. 1894–97.)
1894.—Willett, A., F.R.C.S., London, Provident Life.
O.M.—Williams, C. Theodore, M.A., M.D., London, English and Scottish Law. (T. 1894–99, P. 1900.)
O.M.—Willis, Julian, M.R.C.S., London.

EXPLANATION OF ABBREVIATIONS.

O.M., Original Member.	V.P., Vice-President.
P., President.	S., Secretary.
T., Treasurer.	C., Member of Council.

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LIST OF LIFE ASSURANCE COMPANIES SUBSCRIBING TO THE PROCEEDINGS OF THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.

Atlas.

British Empire.
British Equitable.

City of Glasgow.
Clerical, Medical and General.
Colonial Mutual.
Commercial Union.
Co-operative.

Eagle.
Economic.
English and Scottish Law (2).
Equitable.
Equity and Law.

Guardian.

Hand in Hand.

Imperial.

Law Life.
Law Union and Crown.
Life Association of Scotland.
London and Lancashire.
London Assurance.

Mutual of Australasia.
Mutual of New York.

National Mutual.
National Provident.
North British & Mercantile (2).
Northern Assurance.
Norwich Union.

Provident Association of London.

Rock (2).
Royal Exchange.

Scottish Amicable.
Scottish Imperial.
Scottish Life.
Scottish Metropolitan.
Scottish Widows' Fund.
Standard.
Star.
Sun.

United Kent.
United Kingdom Temperance.
University.

Wesleyan and General.
Westminster and General.

Yorkshire.

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RULES.

I.—Object.

The discussion of the Medical aspect of subjects connected with Life Assurance, with a view to obtaining increased information and greater unity of opinion.

II.—Constitution of the Association.

Ordinary Members, and a Council consisting of a President, two Vice-Presidents, two Secretaries, a Treasurer, and ten other Members.

III.—Qualification for Membership.

Candidates for membership must be legally qualified medical men. They must hold an appointment at a Life Assurance Office, or be recommended as eligible by the Council.

IV.—Election to the Membership.

Candidates for membership shall be proposed and seconded by Members, and shall be elected by ballot at the Ordinary Meetings of the Association.

V.—Election of Officers.

A list of Members recommended by the Council as Officers for the ensuing year, shall be sent to each Member of the Association one week before the last Meeting of the year, at which Meeting a ballot shall be held.

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No one shall hold the office of President, or Vice-President, for more than two years consecutively; and two Members of the Council shall retire every year according to the vote of the Council.

VI.—Meetings of the Association and Council.

General Meetings shall be held on the first Wednesdays in January, March, May, and November, at 8.30 p.m., or at such other time as the Council shall arrange. The duration of the General Meeting shall be limited to one hour and a half, unless an extension be voted by Members present.

The Council, of which four Members shall form a quorum, shall meet before each General Meeting, and may be called together at any time by the President and Secretaries.

VII.—Communications to the Association

Shall be approved by the President and Secretaries before they are brought before the Association.

VIII.—Transactions of the Association

Shall be published from time to time, consisting of the proceedings of the Society, together with other matter approved of by the Council.

IX.—Subscriptions.

One guinea, payable in advance on the 1st of January, annually in the case of Members residing in the London postal district, and biennially in the case of other Members. Non-payment of subscription shall entail suspension of membership.

X.—Alteration in the Rules

May be made by a majority of two-thirds of a specially-convened meeting.

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Report of the Council for 1898-99.

AT the beginning of 1898, the number of members was eighty-four; at the end of 1899, ninety. During the two years, twelve new members have been elected. Four members have resigned, one member has allowed his membership to lapse through non-payment of subscriptions, and one member has died.

The Association heard with much gratification that Her Majesty had conferred the honour of knighthood upon the President, Sir Hermann Weber, and had appointed the first President of the Association, Dr. J. E. Pollock, one of Her Majesty's Physicians Extraordinary.

The best thanks of the Association are due to Sir Hermann Weber for his services as President, to Dr. Theodore Williams for his services as Treasurer during the last six years, and to those members, Dr. Theodore Williams, Dr. Hingston Fox, Dr. Heron, Dr. Symes Thompson, Dr. Thos. Harris, and Sir Dyce Duckworth, who have contributed the various communications, which will be found among the published Transactions of the Association.

The meetings have been well attended, and a large number of members have taken part in the discussions.

The Council notes with satisfaction the improvement in the financial position of the Society during the last two years. At the end of 1897, there was a deficit amounting to £31 18s. 4½d., while at the end of 1899 there is a surplus of £72 13s. In a great measure this improvement is due to the support given by the Life Assurance Companies, a considerable number of which have become subscribers to the Proceedings of the Association.

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The Treasurer's Report for 1899.

I HAVE the honour of presenting the Report on the Finances of the Association for 1899. The year began with a surplus of £17 11s. 8d. from 1898.

The subscriptions of members increased from £69 16s. 6d. to £74 0s. 6d., making, with some arrears, £77 3s. 6d. in all.

The number of Insurance Offices subscribing to our Proceedings has increased from 31 to 43, yielding an income of £48 6s.; and we are indebted to our President, Sir Hermann Weber, for a donation of £10 10s. to our funds, for which act of generosity I am sure the Association is very grateful. Our total receipts are £158 11s. 2d.

The Actual Expenditure has somewhat increased, partly owing to a larger number of meetings being included in the year's finance, and partly on account of our printing more copies of our Proceedings to supply the subscribing Insurance Offices.

The Rent of Rooms for five meetings was £9 9s.; Refreshments, £2 10s.; Shorthand Reporting, £13 13s.; Printing, £46 4s. 8d.; Collector's Expenses, £2 19s.; Petty Cash to Hon. Secretary, £6; making in all an expenditure of £80 18s. 2d., and leaving a handsome balance of £72 13s.

The accounts have been carefully audited by Dr. de Havilland Hall and Sir Hugh Beevor, who have ably performed the same duty on several previous occasions.

It is a great pleasure to me, at the close of my six years' Treasurership, to leave the finances of the Association in so flourishing a condition.

(Signed) C. THEODORE WILLIAMS.

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FINANCIAL REPORT FOR 1899

OF

The Life Assurance Medical Officers' Association.

Receipts.	£	s.	d.
Balance from 1898 - - -	17	11	8
56 Town Members' subscriptions of £1 1s. - - - - -	58	16	0
29 Country Members' subscriptions of 10s. 6d. - - - - -	15	4	6
Subscriptions of 43 Life Assurance Offices to Proceedings - -	48	6	0
Donation from Sir Hermann Weber, M.D. - - - - - -	10	10	0
Arrears - - - - - -	3	3	0
	£153	11	2

Expenditure.	£	s.	d.
Rent of Medical Society's Rooms (5 meetings) - - -	9	9	0
Refreshments - - - - - -	2	10	0
Shorthand Reporting - - -	13	13	0
Printing Proceedings, Circulars, &c.	46	4	8
Collector's expenses and postage -	2	19	0
Petty Cash to Hon. Secretary - -	6	0	0
Cheque Book - - - - - -	0	2	6
Balance - - - - - -	72	13	0
	153	11	2

C. Theodore Williams, *Treasurer.*

Audited and found correct,

F. de Havilland Hall,
Hugh R. Beevor, } *Auditors.*

January 29th, 1900.

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"HEREDITY IN RELATION TO LIFE ASSURANCE,"

By **HERMANN WEBER**, M.D., F.R.C.P.,

President of the Life Assurance Medical Officers' Association; Consulting Physician to the German Hospital, London, and Royal National Hospital for Consumption, Ventnor; and Medical Officer to the North British and Mercantile Insurance Company.

PRESIDENTIAL ADDRESS delivered to the Life Assurance Medical Officers' Association, January 5th, 1898.

GENTLEMEN,

As you have done me the honour to elect me your President, I shall obey the custom and give you a short address at this our first meeting in 1898. It will be difficult for me to equal my predecessors, Dr. James E. Pollock and Sir Richard Douglas-Powell, who have done so much for the firm establishment of the Society, and to whom, as well as to Dr. Glover Lyon, our late Secretary, we owe a great debt; but I will endeavour to do my best, and I have great confidence in the ability and energy of our present Secretary, Dr. Hector Mackenzie, on whom more depends than on myself. The Society may be congratulated on the excellent papers of Dr. Symes Thompson, Dr. Poore, Dr. Hingston Fox, Dr. Colcott Fox, Dr. Hector Mackenzie, Dr. Theodore Williams, Dr. Glover Lyon, Dr. Hoar, Dr. Payne, and Dr. Hall, and on the interesting discussions following them.

Dr. James E. Pollock, our first President, said, in his inaugural address, that the consideration of Heredity would prove a fruitful theme for investigation, and it is on this subject that I will venture to make a few remarks.

Heredity is one of the most interesting questions in Physiology and Natural History, and not less so in that branch of applied Natural Science which we call Medicine. The subject is a very large one; there is scarcely any deviation from the normal which may not be hereditary;—not only consumption, gout, rheumatism, and diseases usually designated hereditary, but diabetes, gallstones, urinary

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calculi, eczema, and innumerable deviations of nerve functions. I have had the good fortune to possess the confidence of several successive generations, up to four, and even to five, and have seen the same morbid processes arising at certain periods of life in two and even three successive generations; thus, towards the middle age, gallstones, then lithic acid gravel and small renal concretions, afterwards glycosuria, occasionally alternating with attacks of gravel; the most curious neuralgic conditions in certain branches of the fifth nerve, and in certain intercostal nerves, writers' cramp, etc., dipsomania, epileptic, choreic, and spasmodic conditions in certain groups of muscles of the face, or the neck, or the extremities, exophthalmic goitre, general trembling movements, or sexual perversions of various kinds, manifesting themselves at almost the same ages.

It would be impossible for me to enter into all the different forms of heredity, and I shall confine myself entirely to the relations with life insurance, but even with this limitation the subject is so large that we can only glance at some of the principal points.

Before entering on different classes of disease, generally regarded as inheritable, I may mention that the non-appearance of disease in the different children must not be regarded as proof that they had not inherited the disease. Occupation, manner of living in general, climatic influences may prevent the development of the disease in one generation, and yet it may reappear with all virulence in the next. I am inclined to think with Darwin and other naturalists that the germ is endowed with invisible peculiarities, for good or evil, which may be kept in abeyance for several generations or not be called into manifest activity, but which under conditions favourable to them may suddenly develop themselves.

This shows the necessity of our enquiring in many instances not only into the life of the proposer's parents, but also of the uncles, aunts, and grandparents.

1. I will first make some remarks on a kind of heredity which, I think, is not always taken sufficiently into consideration: the heredity of the *duration of life.* We may divide people into three classes.

a. In the majority of families the *average* duration prevails, the greater number of members, who reach adult age, die between 60 and 72, unless some infectious diseases or other unfavorable cir-

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cumstances produce an earlier death. This large division I do not intend to discuss.

b. Long lived families. In a smaller proportion of families we find a tendency to very long lives, viz., from 75 to 90 years and more. Infectious diseases and other accidents sometimes likewise cut these lives short, but they frequently survive even these, while the possessors of average lives succumb to them. The latter, for instance, mostly die if they contract typhoid fever after 55 or 60, while I have seen five cases of recovery from this disease in long lived families between 62 and 68 years. Severe attacks of influenza very frequently kill members of average lived families after 60 or 65, while I have seen a fair number of persons belonging to long lived families recover after 65 and even 80 from sharp attacks of influenza accompanied by high pyrexia and great temporary prostration. In the discussion on Dr. Colcott Fox's paper on Syphilis, it was repeatedly remarked, and justly so, that attacks of syphilis in aged persons are grave. My experience of the last 30 or 40 years regarding primary attacks of this disease is small, but while I was Resident Medical Officer at the German Hospital, more than 45 years ago, I attended two cases of primary attacks in men who were over 68 years old. I saw them pass through secondary symptoms of the skin and throat, and apparently recover completely in the course of two to three years. Both these men had histories of very remarkable longevity. I could adduce among members of long lived families many in whom phthisis became arrested when already far advanced, and who then lived on to 70 years and more. The same observations I made on cases of emphysema and mitral regurgitant disease of the heart. Other constitutional diseases, such as gout, even inherited gout, and exophthalmic goitre allow not rarely their possessors to live to more than three score and ten. Tabes takes in them mostly a still slower course than average, and they survive sometimes a stroke of hemiplegia with aphasia twenty years. Even malignant disease, I am inclined to infer from my observations, takes a much slower course.

These long lived families are of great and profitable importance to insurance companies. I do not know whether any companies allow lower than ordinary rates; but they might do so sometimes

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without loss to themselves. I have never proposed this; but I often avail myself of this long life tendency in recommending cases with flaws. Thus, for instance, if there is no other cause against it, I accept cases of gout, inherited and acquired, at ordinary rates, and I hope that Dr. Symes Thompson will not blame me for making this exception. Again, in regurgitant mitral disease of rheumatic origin, with good compensation and good general health in a man of 50 belonging to a long lived family, I make only a very slight addition, but I think that Dr. Theodore Williams will probably agree with me that even this addition is unnecessary. I am not quite so confident with aortic valvular disease, although the long life tendency goes for something with me. I have, for instance, recommended, in conjunction with the late Dr. Murchison, a middle aged man belonging to such a family, with a double aortic murmur of rheumatic origin, but with perfect general health, with an addition. In another case, however, belonging to a scarcely average family, I could not agree with Dr. Murchison in recommending him. It was very painful to me, knowing my friend's own illness, and it pained him so much that he became estranged from me for two years; but to my great satisfaction, a few months before he died so suddenly, he shook hands with me, and we dined once more together. The second case ended fatally five years afterwards; the first is still living.

In quiescent phthisis, too, I am greatly influenced by the long life tendency. I will give a case in illustration. More than twenty years ago I had to make a report on a man of about 60, belonging to a long lived family with only two flaws, viz.: the death of a brother from rheumatic fever, and that of a sister from phthisis. The man was in good health, he had had indubitable phthisis with hæmoptysis at the age of 20, had recovered, and had during the last ten years preceding my report, occasionally consulted me for attacks of gout. He had dulness from the apex down to the fourth rib over the left side with coarse rhonchus. When my report was asked for, the life had been declined by several offices. My reasoning was shortly this: the remains of phthisis are not likely to flare up again, the less so as he has become gouty, which is somewhat antagonistic to phthisis, as Dr. Pollock, if my memory is correct, has already

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stated. I may also leave out of consideration the deaths of rheumatic fever and phthisis, but I may rely on the inherited tendency to long life. This report led to the reversal of the former opinion of the office, the life was accepted with a very slight addition, and the office has already made a large profit.

I could mention numerous other cases, where some flaws were counterbalanced by good points, and where the consideration of the family longevity decided me to acceptance, and, as far as I know, with satisfactory result.

A peculiarity occasionally observed in these long lived families is, that not all the organs and functions retain their vigour in an equal degree, that old age shows itself occasionally even early in the hair, the teeth, the senses, the generative organs, and even in memory and the higher functions of the brain, but as these organs and functions are not vital, insurance officers need not mind them much.

c. Short life tendency. I will now pass to the third class, to short lived families, *i.e.*, families, almost all the members of which die before 60, some from recognised diseases, others from ill-defined conditions coming under the head of a general breakdown. This class is frequently as disastrous to insurance companies as the preceding is profitable.

Although all offices recognise this tendency to early death, and although Dr. Hingston Fox mentions it in his paper on "Assurance of Impaired Lives," and Dr. Pollock in his inaugural address points out the inherited feebleness of the constitution as a point to be carefully weighed, I venture to state that the disadvantages are not so generally recognised as they ought to be. I infer this from reports of country cases, and especially from the answers often given by the examiners to the question—is the family history good? In explanation of my meaning I will give some instances.

Case I.—A man of 36, without occupation, without any organic disease, "healthy but not vigorous," and "looking a little older":

Father	died at	51.	Pneumonia.
Mother	,,	48.	Change of life.
1 Brother	,,	38.	Bright's disease.
1 Brother	,,	28.	Rheumatic fever.

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1 Brother died in infancy.
2 Brothers living, 25 and 27.
1 Sister died at 18. Diphtheria.
1 ,, ,, 24. Diarrhœa.
1 ,, ,, 32. In Australia from exhaustion after sea voyage.
3 are living under 30. Healthy.

The history of uncles and aunts and of grandparents is not given. The answer to the usual question about good family history is "yes."

Life recommended at ordinary rates.

Case II.—A female, aged 27, had three children and two miscarriages. One of the children died of convulsions.

Father died at 48 from dropsy.
Mother died at 45 from change of life.
2 Brothers died in infancy from convulsions.
1 ,, ,, at 19 from bronchitis.
1 ,, ,, ,, 21 ,, stoppage of bowels.
1 ,, ,, ,, 18 ,, a fit.
2 Brothers are living under 25.
1 Sister died at 5 from whooping cough.
1 ,, ,, 20 ,, heart disease.
1 ,, ,, 22 ,, rheumatic fever.
1 is alive and well at 25.

No history of uncles and aunts or grandparents. Answer about family history is "good." Life recommended at usual rates.

I venture, gentlemen, to submit that the family history in these two cases is not good; that it points to a tendency to early death, and that the proposers are not average lives, and ought not to be insured at usual rates, but should either be taken with a very heavy addition, or with premiums to be paid up before 42 or 45, or on a system of under average debt, or be declined.

If proof could have been supplied that the grandparents or the uncles and aunts had been long lived, easier rates of acceptance might have been proposed. To judge from my notes about the family histories of private cases, I am inclined to think that these supplementary reports would likewise not have been satisfactory.

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In these short lived families I have repeatedly noticed the occurrence of premature senility of one or several vital organs in successive generations. Thus I sometimes see at present a man whose age is only 45, but who is in reality an old man in all his tissues and organs. He is grey, he has lost all his teeth, he is deaf, he has had to use glasses for more than six years, he has no memory, he has lost the control of the bladder, and he has been without sexual power for more than eight years. I have seen his father die under similar circumstances from general decay at the age of 49; and the late Dr. Addison, with whom I had attended the case, told me that exactly the same had happened with the grandfather. Insurance offices have to be very careful with members of such families. The man, whom I have described just now, has been insured at the age of 21 as an average life at two offices. With due attention to the family history, viz.: to the tendency to premature decay and early death, this would not have happened. Such lives must either be declined, or insured only for a limited period, or under a special system for under average lives. Children under age belonging to such families are a heavy risk, and the ordinary insurance forms do not sufficiently show this, because the parents may be still alive, perhaps under 40, and the history of the grandparents, uncles and aunts is mostly not supplied. This ought always to be demanded in the insurance of children.

I ought to add, however, that I have seen many exceptions in members of such short lived families; but in order to take them as good lives, their personal history and condition must be good, as well as the surrounding influences. Change of occupation and manner of living, change of abode, and still more of the country, exercise a powerful influence on the constitution. I have often seen the most beneficial effects on the health and longevity of families by migration from the Continent to England. The circumstances ought, therefore, to be taken into consideration by insurance offices.

2. About the very important subject of *phthisis* I shall be rather short, since it has been so fully entered into in previous meetings, especially in the discussion of the valuable paper of Dr. Hingston Fox upon "The Assurance of impaired Lives, chiefly with Reference

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to special Forms of Assurance," and since, besides, we possess the classical work of Dr. Reginald Thompson "On the different Aspects of Family Phthisis in relation to Heredity and Life Assurance," which is so full of reseach and suggestion.

Some medical men think that the influence of heredity is very much overrated with regard to phthisis, but I agree with those who consider it as a very powerful element. There is good reason for Dr. Heron's view that infection, with which I have not to deal in this address on heredity, is a potent element, but inheritance is a more potent one. The degrees of risk vary considerably (*a*) according to the number and nearness of relations who have died from phthisis; (*b*) according to the age of the proposer; and (*c*) according to the latter's personal condition, past history, and manner of living. The element sub (*a*) presents many varieties; if only a brother or sister or some collateral has died, and a good proportion of others are surviving, the risk may be only slightly increased, and may be almost nil, provided the elements sub (*b*) and (*c*) be satisfactory; if one parent and many collaterals have died, the risk is already greater; if in addition to the parent several brothers and sisters have died, the risk is farther increased; and still more so if both parents have died. Specially bad cases are those where, in addition to the parents, also, one or two grandparents, or their brothers and sisters, have been victims of the disease; less so, but not without risk, are cases where the grandparents have died but not the parents, and the latter have been fairly long lived.

The possible complications of different risks are numerous, and require to be weighed individually. As to (*b*) the age of the proposer, the general view is well founded, that the risk of inheritance is greatest up to 30, that it then diminishes gradually up to 40, and still more so from 40 to 50, when it becomes comparatively small. I would say, however, that it never ceases entirely, for it has repeatedly occurred to me that persons, with hereditary taint, after 50, when circumstances as to manner of living, hygienic and mental conditions, etc., had changed from good to bad, have become victims of tubercular phthisis. As to (*c*) the personal condition, every case ought to be judged according to the

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personal condition and past history. The proposer ought to have the appearance of health and strength, ought to be free and to have been free ftom hæmoptysis and pleurisy, from glandular inflammations, and swelling, or so-called scrofulous, but generally tuberculous, diseases of the joints, from affections of the apices, and from frequent catarrhs; he ought to lead a healthy life, and ought to be able to continue doing so, and to be free of bad habits. Even with these conditions fulfilled the proposer can, if heavily tainted, scarcely be insured, excepting at a high premium before 30; if he applies after that age, the premium may be less in proportion, and usual rates may be granted, after 50, if the family and personal histories are otherwise average. A thin and weakly person with a phthisical family taint ought, as a rule, to be rejected.

As to the amount of addition, I do not think that general rules ought to be given, as every single case is more or less complicated and requires careful weighing. Amongst these individual conditions, we may also bear in mind that the mortality from phthisis is somewhat less in females than in males, namely, about one-fifth less amongst females than amongst males. Another point to be considered is the proportion of cases of death from phthisis to the number of members of the family. If, for instance, amongst 18 grandparents, granduncles, and grandaunts, two have died of phthisis, and amongst 14 parents and uncles and aunts likewise two, the matter is not so serious as if in the grandparental generation six out of 18 had died, and in the parental five out of 14; or if we knew that out of seven members of the parental generation four had died from phthisis. This remark, as to the *proportion* of cases, not the mere number alone, relates to all inheritable diseases, not only to phthisis. I agree with those who are against endowment policies in phthisical risks, since the danger falls into the early part. The deduction system has been strongly recommended by some, and as strongly opposed by others. In many cases it is, no doubt, inapplicable; but in some it may, at all events, be mentioned to the proposer with the advantages and disadvantages, so that he may have his choice, whether to be taken at such terms or to be declined. From Mr. H. Cockburn, the judicious manager of the North British

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and Mercantile Insurance Company (Life Department), I learn that not only with regard to phthisis, but with "under average lives" in general, besides the ordinary system of increased premium, a system of "under average debt" is not rarely used, although Mr. Cockburn rather prefers for the company the increased premium in cash. The under average debt may either be *constant* or *decreasing*. To give an example,—a life aged 30 is surcharged five years. If the proposer pays the ordinary premium, his policy would be endorsed, creating a debt of about 12 per cent. on the sum insured, continuing for 24 years. This is the "constant debt" deductible from the sum insured, whether death takes place in the first or the 24th year. The other system, called "decreasing debt," would in the case supposed, start at £24, and would decrease by £1 during the next 24 years, after which the policy would hold good for the full amount. Mr. Cockburn remarks on this system, that it is not always a very easy matter to fix the amount of the debt.

3. The tendency to *emphysema* and chronic *bronchitis* shows a decided element of heredity, but mostly for death in later life. If only one parent has died at an advanced age, say over 65, we need not provide against it, but if there are several deaths below that age, we must recognise the disposition, and either charge a moderate extra, or propose an endowment policy.

4. *Carcinomatous* diseases are mostly regarded as inheritable, and the family tendency cannot be denied. I will not enter fully on this subject, which has been thoroughly discussed in Dr. Payne's excellent paper, and the remarks on it by many of the members. Some years ago I examined my private note books on this subject, and found amongst 66 cases of cancer, 20 with one or more deaths from this disease in their families. The number is too small to allow any inference to be drawn. I have met with two families in which the history of cancer could be traced through four generations, and with three more in which it existed in three generations, killing between 18 and 34 per cent. of all the members, with a marked preponderance amongst the females. As to the action of assurance offices, I think that the rules suggested by Dr. Payne are judicious. If there are several cases of cancer amongst the parents, grandparents, and near relatives, an addition is mostly required; if there

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is only one, and the other family history and the personal conditions are satisfactory, the extra may be waived, especially if the death has occurred late in life. As cancer usually develops in the later part of life, unlike phthisis, a form of endowment insurance is often satisfactory. We have, however, to bear in mind that the disease in the offspring appears sometimes earlier than it had done in the parents. Fixed rules can, I am afraid, not be laid down; but every case requires consideration on its own merits. Dr. Payne has already pointed out that in females death occurs generally earlier than in males, and that the tendency is, besides, greater; further, that not only the sex is of importance, but also the age, that a young person may have easier terms than one near the middle age.

5. *Diabetes* is a term which is often applied to widely different conditions. In life insurance it ought only to be applied to the disease with grave symptoms as it was known in former years, and as it appears in mostly young people; where it cannot be controlled by the arrangement of diet; while the term *glycosuria* ought to be given to the cases of sugar in the urine in mostly fat, often gouty persons of somewhat advanced age. Most medical men keep to this distinction, but some do not. Both forms are inheritable. If only one of the parents has died from diabetes, I recommend as a rule a moderate extra, unless the proposer is passed 40, and the personal health and manner of living and the other circumstances are satisfactory, in which case no extra need be charged. If one of the parents and, besides, a brother or sister have died, I should be inclined to decline a life under 30, and to accept only with a heavy increase between 30 and 40, and on easier terms later. As to *glycosuria*, I should not advise an extra for only one death at advanced years, while for several deaths a moderate extra or an endowment policy up to 50 would be just. If glycosuria has already manifested itself in a proposer tainted with heredity, a heavier addition is necessary, unless the family is very long lived. Every case of glycosuria, however, which is not controllable by dietetic management, ought to be declined.

6. The question of *gout* is so complicated, and the personal element so important, that every case requires individual con-

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sideration. My impression, I may premise, is that the father's element is the more potent for sons. If only the father or grandfather or an uncle has died in advanced years, and the other circumstances are good, no extra seems required. If, however, several cases on the paternal, and perhaps also on the maternal side, had occurred, I should regard the risk as increased and requiring an extra, unless the proposer were a very moderate man with regard to eating as well as drinking, and leading an active, healthy life. To a female proposer, if otherwise satisfactory, I should be inclined to give easier terms. If a life with gouty inheritance had already suffered from gout, I should always recommend an extra more or less heavy for life, or an endowment policy. I have seen some cases of early gout, with heavy inheritance, in not specially long-lived families which were not at all insurable, excepting on a system of under average debt. Also if in a middle-aged man with inherited gout, a small quantity of albumen were found in the urine, it would be mostly necessary to decline the proposal. I need scarcely remind you that my remarks refer only to the inherited tendency, not to acquired gout, on which, as well as on other points, we have the guidance of Dr. Symes Thompson.

7. *Rheumatism* is certainly not without a hereditary element, but it is more frequently in my experience acquired than inherited. If, however, several cases of rather early death from rheumatism should have occurred in the family history, this ought to be taken into consideration. More frequently than not rheumatism is compatible with longevity.

8. *Rheumatoid Arthritis*, or *arthritis deformans*, is not rarely inherited; but the sufferers often live to old age. I would, therefore, if the general health is good, accept such cases unless there were other unfavourable circumstances.

9. *Rheumatic fever* is different from both the preceding groups. The tendency is decidedly inheritable, and protection by an extra is required, if the proposer is young, and has lost several near relatives from the disease. It is probably a microbe disease. You have perhaps noticed that amongst the children of a large family one or several have died from phthisis, others from rheumatic fever.

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There is, I am inclined to think, a kind of alliance between these two diseases, but the exact nature of it I do not know. In children of a consumptive family rheumatic fever brings sometimes the advantage of mitral disease which mostly protects the bearer from phthisis. I have repeatedly found that several children of the same family have died from phthisis, one from rheumatic fever, while one or two have recovered from rheumatic fever with mitral disease and have remained free from phthisis, and have attained old age. I have once recommended such a life to an insurance office with a slight extra; it was accepted, though with some reluctance, and it has been a source of profit.

10. With regard to the *heart* and *blood vessels*, heredity is by some medical men not adequately appreciated, yet it is present, not only as a disadvantage, but also as a good element. In the long life group, to which I have referred in the beginning, the long continued energy of the organs of circulation is one of the main elements, and naturally so, since the nutrition of the different vital organs depends on the condition of the heart and blood vessels.

On the other hand we not rarely meet with inheritable early decay of the heart. I see at present occasionally a gentleman, of 44, who for the last four years has shown signs of heart failure; the pulse, which formerly had been regular, is now often intermittent; there is dyspnœa at moderate exertion with palpitation of the heart. The father died at 51, from heart failure with bronchitis; and Sir William Gull, with whom I attended him, told me that his father, the present man's grandfather, had been in a very similar condition and had died at 53, after having developed chronic bronchitis and albuminuria. Against cases of such nature, insurance offices must protect themselves, but it is often difficult to read this kind of inheritance from the proposal paper, since the father's death as well as the grandfather's would probably have been put down as bronchitis or albuminuria. Two of my patient's sons, aged 19 and 21, have been accepted as good lives at usual rates; but it appears to me improbable that they will live to advanced age, unless the tendency to early decay is specially counteracted by hygienic means.

Fatty degeneration of the heart is sometimes hereditary; and not less so angina pectoris.

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Valvular diseases of the heart may not rarely be traced through several generations. This is due partly to the hereditary element in rheumatic fever, in the earlier, and partly to that of atheromatous degenerations in the later part of life.

The hereditary tendency of degeneration of the small blood vessels is generally acknowledged, as the questions about apoplexy and paralysis in the proposal forms show; but this tendency exists not only with regard to the cerebral vessels, but also those of other organs of the body.

11. A hereditary element exists in a number of morbid tendencies not yet mentioned, as for instance to biliary and renal concretions, to hæmorrhoids, to Bright's disease and to hæmophilia. The heredity, however, is not so common as to induce us to charge an extra, if such a flaw is isolated, but if several flaws, though of different kind, occur in the same history, the question requires a more serious consideration.

12. There are, besides, other less tangible hereditary conditions which sometimes cause losses to insurance offices against which, however, we can scarcely provide by extras. Whole families, for instance, show in successive generations unusual susceptibility to some microbic poisons. Some of these poisons exercise on the members of certain families an extraordinarily fatal effect; I will only mention small pox, scarlet fever, diphtheria, typhoid fever, erysipelas, pneumonia, but I do not think we can load a premium on that account alone.

13. The *nervous system* offers the most remarkable instances of heredity in all its functions; but, although they are of the highest interest to the physiologist, the pathologist, and the psychologist, few of them have a direct relation to insurance offices. The question of insanity is contained in most of the proposals, but not all cases of insanity have a special tendency to shorten life. If one or even two cases of insanity, with death at advanced ages, should have occurred in a family, that flaw, when unaccompanied by others, would not induce us to propose an extra. If, on the other hand, a well-marked tendency to paralysis of the insane could be traced in the history, the matter would have to be carefully weighed.

An important matter is the family tendency to a strong or weak

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brain. An inherited vigorous brain mostly passes unhurt through great emergencies, while an inheritable weak brain generally breaks down under similar circumstances from what is often called "overwork" or "shock." We frequently see this in our practice, but we can scarcely protest as assurance officers against such risks.

Dipsomania is, no doubt, often an inheritable disease of the nervous system, and its occurrence amongst the parents or older brothers and sisters must induce us to make the strictest inquiries into the personal history, manner of living, and all the surroundings of the proposer. Fixed rules cannot be laid down as to extras. Other forms of alcoholism are often allied to dipsomania, and require similar consideration. A very remarkable proof of heredity in alcoholism has occurred to me to-day. I had to examine, at the North British and Mercantile Insurance Office, the life of a prison chaplain. When I asked him whether he could ascertain the circumstances which had led to crime amongst his prisoners, he said that in at least 90 per cent. it was drinking, and that the element of heredity was truly awful. He had had the father, a distinguished lawyer, and two of his sons, likewise lawyers, and he thought that a third one was coming. You will agree with me that there is here another element, that of example, just as Dr. Heron insisted on the infection element in phthisis. The latter may be called microbic infection, the former moral infection, at least, until a microbe has been found for dipsomania. This example, or infection, however, explains only a few cases. Often the parents have died while their offspring were mere children, and yet the latter became alcoholic. A curious circumstance of this heredity is, that the effects of alcohol are mostly very similar in the children and in the parents; in some epilepsy, in others suicidal or homicidal tendency, in others kleptomania, again, in others peculiar sexual aberrations.

Exophthalmic goitre is inheritable and requires an extra, varying according to the other circumstances of the case, especially the possibility of avoiding worry, and over-exertion, and the chance of migration to healthy and suitable localities, by which the disease can often be checked.

Asthma is often a disease of the nervous system and can be inherited.

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The tendency to epilepsy is not rarely transmitted, and may show itself in the children in various taints, either as epilepsy, or insanity, or dipsomania, or uncontrollable passions, etc. All the circumstances of the proposer must, therefore, be carefully weighed.

Tabes is, I am inclined to think, somewhat less inheritable than epilepsy, since it is not rarely the effect of syphilis.

To apoplexy I have alluded under the head of blood vessels.

Paralysis agitans is inheritable, but the victims of it mostly live long.

Peculiar forms of trembling and tremor occur in some family histories. I am intimately acquainted with a long-lived family where I have seen the most remarkable trembling and shaking in four successive generations, occurring amongst all the male members, sparing the females, beginning almost in childhood and lasting till death, which, in the head of the first generation known to me, occurred in the hundredth year. It is worth bearing such family peculiarities in mind. It has twice happened, that my opinion has been asked about similar cases which had been declined, from fear that the trembling was either due to alcoholism or to commencing disease of the centres. I was able to recommend both as good lives, and the result has been advantageous to the offices.

This peculiarity shows that not all inheritable defects are unsatisfactory for life insurance.

If it is necessary in every instance to take all the points connected with the proposer into consideration and judge every case on its own merits, this is particularly important with affections of the nervous system. In this class of cases we must also specially remember that the inter-marriage of tainted relatives increases the risk. This relates to all morbid taints, but in a prominent way to those of the nervous system.

It is high time, gentlemen, that I now conclude my address, and ask your pardon for having detained you so long with matters which most of you know as well and better than I do.

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"THE INFLUENCE OF HEART DISEASE ON LIFE ASSURANCE" (2nd Contribution),

By **C. THEODORE WILLIAMS**, M.A., M.D., F.R.C.P.,

Physician to the English and Scottish Law Life Assurance Association; Consulting Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

Read before the Life Assurance Medical Officers' Association, March 2nd, 1898.

Dr. C. E. Hoar, *Vice-President, in the Chair.*

In my first paper on the Influence of Heart Disease on Life Assurance, read last year to the Association, I dealt with the general features of the subject, and with the effects of disease of the pericardium and the mitral valve on Life Assurance.

We must now continue the subject of valvular disease, and the risks attending on it, and we must not forget the encouraging evidence furnished by the late Sir Andrew Clark and also by Sir Dyce Duckworth * as to the number and variety of cases of valvular disease long free from serious symptoms, for both these physicians shewed that many persons carried these lesions for years apparently without knowing it.

Dr. A. W. Barclay † shewed that, out of a total of 419 bodies examined at St. George's Hospital during the years 1846 and 1847, with reference to the state of the circulatory organs, 79, or 18·8 per cent., shewed valvular lesion of some kind, and among the 79 the lesions were distributed as follows:

Aortic and mitral disease ...	36, or 45 per cent.	
Aortic alone	26, ,, 33	,,
Mitral ,, ...	17, ,, 22	,,

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* *British Medical Journal*, July 31st, 1886.

† *Medico-Chirurgical Transactions*, vol. XXXI., 1848.

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Of 367 cases of valvular disease collected by Dr. King Chambers* from the records of St. George's Hospital, the mitral and aortic valves were affected in 121, the aortic alone in 107, the mitral alone in 96, the mitral and tricuspid in 10, the mitral, aortic and tricuspid in 10, the tricuspid and aortic in two, the aortic, mitral and pulmonic in two, and the aortic and pulmonic in four.

Dr. Hayden, in his admirable work,† to which I am largely indebted, carefully analyses 44 cases under his own care, in which he conducted the autopsies himself, with the following result:

The aortic valves were affected in 26, or 59 per cent., the mitral in 29, or 66 per cent., the tricuspid in five, and the pulmonic in one. Aortic and mitral disease in combination in 10.

Of the 44 cases, 28 were males and 16 females, and the average age at death was 37 years and four months.

The late Dr. Peacock‡ gives as the results of 63 cases of valvular disease:

26, or 41·2	per cent.,	were	cases	of	aortic disease.
17, ,, 26·9	,,	,,	,,		mitral.
16, ,, 25·4	,,	,,	,,		combined mitral and aortic.
3, ,, 4·8	,,	,,	,,		combined mitral, tricuspid and aortic.
1, ,, 1·6	,,	,,	,,		pulmonic disease.

The mean age at death of the aortic valvular cases was 43·4, that of the mitral cases at death 29·3. Of the aortic cases, 23 per cent. originated in rheumatism; of the mitral cases, 62·5 per cent.

According to Dr. Sidney Phillips' statistics of St. Mary's Hospital, compiled at Sir William Broadbent's request, in 151 cases of morbus cordis, 11 were instances of aortic stenosis, 49 of mitral regurgitation, 53 of mitral stenosis, and 38 cases of aortic regurgitation.

With regard, therefore, to the liability to attack of the mitral and aortic valves, for owing to the rarity of other valvular lesions

* *Decennium Pathologicum; British and Foreign Medico-Chirurgical Review*, vol. XII., 1853.

† "Diseases of the Heart and Aorta," 1875.

‡ "Valvular Diseases of the Heart," p. 75.

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in Insurance work, we do not propose to examine them, there appears to be some difference of statistics, but, on the whole, mitral lesions seem slightly more common. With reference to the relative frequency of the different valvular lesions, Dr. Hayden and Dr. Walshe* place them as follows:

(1) Mitral regurgitation; (2) Aortic stenosis; (3) Aortic regurgitation; (4) Mitral stenosis. Whereas, in Sir William Broadbent's† experience, it is (1) Mitral regurgitation; (2) Mitral stenosis; (3) Aortic regurgitation, and (4) Aortic stenosis.

Where there is a combination of lesions the commonest are:

(1) Mitral incompetence and stenosis; (2) Aortic and mitral regurgitation; (3) Aortic incompetence and stenosis.

The actual valve lesion is not of such importance as the condition of the ventricular walls and of the vessels.

If there be fatty or even fibroid degeneration of the ventricular wall, or if there be considerable dilatation and no compensatory hypertrophy, any valvular lesion is rendered far more serious, and this applies to all valvular lesions without exception.

Another well-known principle, laid down in my former paper, which we must still bear in mind in treating of aortic as well as of mitral disease, is that the origin of the lesion determines the after history and prognosis of the disease.

We have three causes of aortic valvular disease:

(1) Congenital malformation.
(2) Endo-carditis.
(3) Degeneration.

As Dr. Peacock‡ has well pointed out in cases of congenital valvular disease, the condition of the valve may predispose to endo-carditis. There may thus be a double lesion to deal with, a layer of lymph forming on the malformed valve and increasing the difficulties to the circulation. In some cases of malformation we find two valves instead of three; in others there are adhesions between them, and a number of curious conditions, which the late Dr. Peacock§ fully described.

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* "Diseases of the Heart and Great Vessels," 4th Edition, p. 393.

† "Heart Disease," p. 68. ‡ Croonian Lectures. § "Malformations of the Human Heart," 1858.

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Endo-carditis plays a part in the production of aortic disease, though, perhaps, not so great as in mitral, because aortic disease is more common in middle and old age, and is generally the result of degenerative processes.

Chronic endo-carditis and arteritis is a great producer of aortic lesions, for it often gives rise to atheromatous degeneration, as is seen in the laborious workers in heated atmospheres, of which more presently.

The combination of endo-carditis and atheroma was well seen in a case I *exhibited to the Pathological Society in 1870, where in a woman of 24 the aorta was atheromatous, and the valves had become extensively ulcerated; two were perforated, one had nearly disappeared in the ulcerative process, and all had vegetations of various lengths attached to them, and in one they were so large that the valve, which contained some cretaceous matter, formed with the vegetations a rugged mass extending into the ventricle to the extent of one and a half inches. Patches of lymph, with some processes, were also present on the mitral valve, the former being due to the friction of the protruding aortic vegetations.

Atheromatous degeneration is what we must chiefly look to as the origin of aortic disease. It ruins the mechanism of the valves in several ways, first by stiffening, or thickening, or rendering inelastic, or by giving rise to ulcerations of the cusps themselves; secondly, by producing dilatation of the aorta and the aortic ring. The atheromatous changes in the coronary arteries will still further promote the destruction. One other cause of aortic disease, and specially of aortic incompetency brought about by atheroma, is traumatic rupture of the valves, of which many cases have been published. The most remarkable is when a single valve, being partly torn from its adhesions, hangs as a vibrating tongue in the blood current, thus giving rise to a musical diastolic murmur. An example of this I recorded in the "Pathological Transactions" (vol. XXI.) The patient, aged 49, who had been a rigger for 25 years in Woolwich dockyard, and had been pensioned, had enjoyed good health, except that he once strained himself wheeling a heavy

* "Pathological Transactions," vol. XXI.

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barrow. He became a cook in Greenwich Hospital, and lived in a very hot atmosphere, and then, after five months, broke down with pain in the epigastrium, short breath, œdema of the legs, and slight albuminuria, and when examined, presented a loud musical diastolic murmur in the cardiac region, and over the whole upper chest as far as the third rib, and also down the spine; the second sound was inaudible everywhere, and the murmur reached its greatest intensity at the sternum, opposite the second intercostal space.

This patient died soon after, and on post-mortem examination, the aorta was found with large plate-like masses of atheroma in the middle coat. Two of the aortic valves closed well, though thickened, but the third was attached to the aortic wall at a lower level than the other two, and, being much longer, protruded into the ventricle. The retroverted valve had evidently been torn from its attachments after great strain, and hence its position at a lower level than the other two.

In this case the hot atmosphere of the kitchen seems to have promoted the atheromatous changes, as the man appeared to have retired from the service in good health, but the rupture probably took place during the wheelbarrow strain, and then followed a reparative process, ending in the attachment of the valve at a lower level. I mention this case because it brings to my mind several similar ones of aortic disease, where the lesion was brought on in middle-aged men through working at a great strain in heated atmospheres, and it is a question whether those who follow such occupations should not be altogether debarred from insuring, even if the diagnosis of degeneration be not clearly made out.

Dr. Clifford Allbutt * has pointed out the liability to disease of the aorta and its valves "among persons engaged in occupations requiring severe sustained and oft-repeated muscular efforts, in which all the muscles of the body are simultaneously engaged, such as lifters and soldiers, and, again, among smiths and sawyers, while the chest is subjected to compression." Dr. Peacock noticed the same in young nursemaids who had to lift children.

* St. George's Hospital Reports, vol. V., and "Clinical Transactions," vol. VI.

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The tension gives rise to a slow process of disorganization, leading to inadequacy of the aortic valves, and, not seldom, to atheroma of the aorta itself and sometimes to aneurysm.

We must not omit alcoholism from the list of causes, as this alone will bring about disease of the aortic valves and atheromatous changes. Dilatation of the aorta itself is a potent cause of aortic regurgitation, even if the valves themselves are unaffected, as the stretching of the aortic ring prevents the due approximation of the cusps, and the complete closure of the valve.

Aortic disease is far more common among men than women, in the ratio of 21 to 5, and, according to Dr. Hayden's statistics, the average age of death among men was 42; that of females 32.

Let us now consider the varieties of aortic valvular disease in their relation to Life Assurance, viz.: aortic incompetency and aortic stenosis, and, again, the combination of the two.

Aortic incompetency is due to non-closure or incomplete closure of the valves, whereby a certain proportion of the blood, after being expelled during the systole, falls back into the left ventricle during the diastole. The ventricle becomes over-filled, and in time this distension gives rise to first dilatation of, and then to compensatory hypertrophy of, the left ventricle, and it is in these cases that the largest hearts, weighing 45 to 60 ounces, are found after death.

If hypertrophy does not take place, mitral regurgitation, with its attendant evils, may follow.

The combination of ventricular hypertrophy, aortic reflux, and rigid atheromatous arteries gives rise to the violent propulsion, to the marked reflux so characteristic of the locomotive water-hammer pulse, with its jerking, visible, collapsing movement, and its striking sphygmographic tracing. There is also the *capillary pulse* seen in the skin, and in some instances, the *venous pulse*. On auscultation, we hear at the aortic cartilage, extending along the sternum towards the cardiac apex, and sometimes in the carotids, the loud diastolic murmur, and the cardiac dulness is found to be largely increased, and the impulse is detected in the sixth or seventh, or even eighth spaces. During the diastole there is often considerable anæmia of

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extremities, and what, perhaps, is more characteristic, there is the pulsation of the carotids.

The great danger of aortic incompetence is the possibility of asystole and sudden death, from the over-distended and weakened left ventricle being unable to contract on its contents. Dr. Walshe* gives an instance of sudden death from aortic reflux, where there were apparently no symptoms, and cites many others.

In Dr. Hayden's† 44 cases of valvular disease, there are 12 instances of sudden death, and in eight of these the aortic valves were diseased.

I have known several cases of sudden death from this cause. Aortic disease may be accompanied by angina pectoris, and this gives another terror to it.

On the other hand, there are many cases of aortic incompetence where the regurgitation is slight, and the compensation sufficient, without there being extensive hypertrophy, and these present few symptoms, and the patients are often unaware that their hearts are affected.

As Sir William Broadbent‡ says, when there is a diastolic murmur at the aortic cartilage, and the second sound audible in the carotids, we may conclude that the incompetence is inconsiderable. Such cases are sometimes accepted for Life Assurance, but the great difficulty is how to make sure that the lesion is not likely to increase. This depends to a large extent on its origin. If such a case originated in an attack of rheumatic endo-carditis, and the patient was comparatively young, the question of accepting the life, with an extra, might be entertained, but, if there were proof of degeneration of vessels, or of heart, or both, no extra would protect an office against the risk.

Aortic stenosis is a narrowing of the aortic orifice, either from congenital malformation, or from a puckering of the valves, through inflammatory changes, which prevent their falling back into the sinuses of Valsalva before the blood current, or the valves may be joined by endo-cardial adhesions, or may be the subject of atheromatous and calcareous changes, or the seat of vegetations,

* "Diseases of the Heart," 4th Edition. † Op. cit. ‡ Op. cit.

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which protrude into the circular orifice, and obstruct the passage of the blood. The effect is to produce hypertrophy of the left ventricle, but not to the same extent as in aortic incompetence. The cardiac impulse will be felt lower than in the normal by at least an intercostal space, but not largely displaced outwards. A loud systolic murmur is heard over the sternum at the level of the third intercostal space, most distinctly outside the right edge of the sternum in the second intercostal space, and in the carotids, and along the thoracic aorta. Occasionally it is accompanied by a thrill felt in the second and third spaces close to the sternum. When the heart is much covered by spongy lung the murmur is best heard at the apex and in the right carotid.

The pulse is long and slow and not strong, sometimes jarring, contrasting with the collapsing pulse of aortic incompetence. If in aortic stenosis, compensation fails, then follow dilatation of the left ventricle, incompetence of the mitral valve, dilatation of the left auricle, congestion of the lungs, and various complications, including sometimes apoplexy. The prognosis in aortic stenosis is dependent (1) on the extent of lesion; (2) the amount of compensation through hypertrophy of the left ventricle; (3) the absence of all complications; (4) the age of the patient; and (5) as in aortic incompetency, the cause of the lesion, endo-carditic or degenerative.

Aortic stenosis has been considered as the least serious of valvular lesions, but Sir William Broadbent* regards it as more dangerous than mitral incompetency, and shows from his statistics that the average age of his cases at death was 40, a good deal younger than some of the other forms.

With regard to the combination of aortic stenosis with aortic incompetency, or double aortic disease, Sir W. Broadbent is of opinion that "where stenosis gradually becomes established in a case where aortic incompetence already exists of such severity that symptoms are readily and easily induced, it may act to a certain degree as a curative agent by limiting the amount of regurgitation and making the circulation more equable and regular. The heart

* Op. cit.

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will undergo further hypertrophy, and the risk of undue dilatation will be diminished." Sir William states that he knows several cases where a patient, after being in imminent danger from aortic regurgitation, has, on the supervention of aortic stenosis, been enabled to enjoy a life of comparative comfort for many years.

Now taking a general view of aortic valvular disease, and bearing in mind the facts (1) that it is usually due to degenerative disease, which may extend to both heart and arteries, and (2) that sudden death frequently occurs from one form of it, there seems to be no alternative but to adopt the general rule of rejection, only accepting such cases as upon examination present exceptionally favourable features.

We must now discuss the affections of the walls of the heart, as regarding Life Assurance, and though they are of the utmost importance, it must be confessed that our knowledge of them is infinitely less complete than our knowledge of valvular lesions. However, if in insurance work we come across a case of cardiac hypertrophy, we have first to investigate its origin.

If there be no valvular lesion or adherent pericardium, we should look out for signs of arterial tension, and, if these be present, we must enquire for a history of renal disease or gout; or, again, the hypertrophy may be the result of athleticism or of some other form of muscular over-exertion or strain, or of great mental anxiety and excitement, or of alcoholism, or, in the case of married women, of repeated pregnancies.

Cardiac hypertrophy signifies, as a rule, that compensation has been established, and when, with the hypertrophy, there is no embarrassment of the circulation or shortness of breath, and the pulse is not too hard and incompressible, we may assume that compensation is efficient; but, when the slightest extra exertion causes distress of breathing, an embarrassed circulation, a quick pulse, and thumping impulse, which heaves against the thoracic wall, and when the systole is prolonged at the expense of the diastole, and the re-duplication of the first sound shows that the ventricles no longer act together, then we may conclude that there is a want of compensation.

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Hypertrophy of the right ventricle is for the most part caused by either emphysema and bronchitis, or lung fibrosis, or pulmonary collapse, or mitral stenosis or regurgitation, and is generally accompanied by dilatation. In cases of emphysema the recognition of the hypertrophy is often difficult, but, in a good many instances only dilatation is present.

Nevertheless, there are cases of emphysema with hypertrophied right ventricle, where the compensation seems sufficient to warrant acceptance with a considerable extra.

Cases of hypertrophy of the left ventricle must be judged by the mode of origin and the extent of the hypertrophy. Where it is due to high arterial tension or capillary obstruction, and specially when arising from chronic renal disease, rejection must be our rule, and the same may be said of hypertrophy arising from alcoholism, or great mental excitement and distress.

The same is true when it accompanies trades and occupations involving constant daily strain on the heart, or, again, where the hypertrophy, as is seen in aortic regurgitant cases, is enormous, causing protrusion of the thorax and giving rise to such forcible contractions, as to imperil the walls of vessels more or less fragile from atheroma.

On the other hand, an athlete of middle life who has to a great extent given up athletics, in whom there is no valvular disease, and no signs of degenerated arteries, and where there is clear proof of compensation, I should be inclined to accept with an addition, provided the kidneys were sound and gout was absent. Women, too, where the hypertrophy is the result of frequent pregnancies, if the circulation be good, with no marked dyspnœa on exertion, may be accepted with an addition after the change of life.

Dilatation of the heart is the expression of weakness and yielding on the part of the organ under the pressure of obstruction to the circulation, whether the cause of the obstruction be valvular, high arterial tension, and resistance in the arterioles, or pulmonary obstacles, and we recognise the condition by the increased area of cardiac dulness, the feeble, and, as Walshe says, the quasi-undulatory impulse, the indistinctness of the apex beat, the short high-pitched first sound, and the more rapid but weaker and compressible

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pulse, the breathlessness, and often the congestion of the bases of the lungs.

Cases of permanent or progressive dilatation of either right or left cavities, without compensatory hypertrophy, are outside the pale of insurance, but we often find instances of temporary dilatation of the ventricles, specially of the right, due to great exertion, such as rowing or running, or Alpine climbing, subsiding after rest.

Excess of smoking may give rise, also, to temporary dilatation, which ceases on abstention from the habit. However, even in these cases of temporary dilatation it would not be wise to consider the insurance question before the dilatation has quite passed away.

Far more serious are the degenerations the walls of the heart are liable to undergo, such as the fibroid, the fatty infiltration, and the fatty degenerative processes.

The increase in the connective tissue of the heart at the expense of the muscular tissue, which undergoes atrophy from pressure, pointed out by Sir Richard Quain, and the fibroid degeneration of the heart which follows attacks of pericarditis, are both forms of disease to be borne in mind in insurance examinations.

For the connective tissue form it is not necessary that the heart should be large, as there is often considerable atrophy of the muscular fibres, though the original specimen which Sir R. Quain exhibited at his Lumleian Lectures, was an enormous heart weighing 40½ ounces. The pathological process seems to be simply an increase of the connective tissue growth. Sir Richard gives, as the characteristic of the connective tissue hypertrophy of the heart, a strong heaving impulse with a dull, obscure first sound.

Fatty growths round the heart and the pericardium, and the large increase in the amount of fat in the cardiac wall to be found separating the muscular fibres, form an affection of the cardiac wall, which can hardly be diagnosed from other cardiac enlargements by physical signs, but can be sometimes deduced from the general appearance and condition of the individual.

The sounds of the heart are usually indistinct, the area of dulness is increased, the impulse is feeble, and the breath is somewhat short.

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Fatty degeneration of the heart is the most serious of all the diseases which attack the cardiac walls, and partly from the insidious course of the process.

Many people drop down dead, or are found dead in their beds, whose symptoms have given so little alarm, either to themselves or their friends, that a medical man has never been consulted, and after death the heart is found in a state of fatty degeneration and often ruptured.

The symptoms during life are often obscure, and even absent, but when observed, consist of shortness of breath on exertion and defective pressure throughout the arterial system. The patient is liable to attacks of syncope, sometimes to apoplectiform or epileptiform attacks. In these attacks the Cheyne Stokes respiration may or may not be present. The pulse is unsustained, it may be regular and almost normal, or it may be frequent and irregular, but a low tension slow pulse is the most typical, and I have noted it in almost all the cases I have seen.

Arcus senilis was at one time thought to be pathognomonic of the disease, but it has been shown not to be so; the late Dr. Hayden regarded it as a presumptive, though not positive, symptom of fatty degeneration of the heart. If the heart has not been previously the seat of hypertrophy, it need not be enlarged, and the size may be normal, but if fatty changes be at all advanced, there will be no impulse, either seen or felt. If felt, it will be feeble, and there will be no arterial pressure. The first sound is short and faint; sometimes there is a slight systolic murmur from the yielding of the parietal attachment of some of the papillary muscles at the ventricular systole.

Still, we often meet with individuals with feeble beating hearts and pulses which are slow and not sustained, and yet are not the subject of fatty degeneration, and the way to distinguish between these two classes is to make them walk briskly: the pulse of the feeble heart will rise and become more distinct and regular, whereas that of fatty degeneration becomes more irregular and shorter than before.

A few steps up and down the examiner's room will often clear a

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good many mysteries from his mind as to the eligibility of a candidate for Life Assurance. Sir Richard Quain's original papers, with his valuable statistics, have shown what a fertile cause of sudden death this disease is, and anything which enables us to diagnose it easily would probably save the Insurance Offices a good many thousands.

The various causes of cardiac neurosis must be briefly considered in connection with Life Assurance, and they present difficulties on account of accurate diagnosis not being always possible during the short and generally single examination open to a medical examiner. Of course, all cases of genuine angina pectoris, *i.e.*, where the neurosis is combined with distinct organic disease of the heart, are ineligible, whether it be lesions of the aortic or mitral valves, or fatty degeneration of the cardiac walls, or atheroma obstructing the coronary arteries, or a combination of one or more of these.

The same may be said of the *angina pectoris vaso-motoria*, so well described by Sir R. Douglas-Powell,* where the neuro-vascular system is unduly sensitive, so that the arterioles contract under slight stimuli, thus raising the blood-pressure. We cannot be certain that the contracting power of the ventricles will always suffice to overcome the obstruction caused by the sudden cramp or spasm of the vascular walls. In doubtful cases a history of pain coming on during or after exertion, should decide us at once to reject the life.

Doubtless there are instances of pain in the cardiac regions due to distended stomach or loaded colon, exercising pressure on the heart of a temporary nature, but these may be eliminated by the history, and specially in reference to exertion, and by careful physical examination.

Before closing, let us say a few words on the varieties of pulse met with in our examination. We come across instances of tachycardia unconnected with exopthalmic goitre, where the pulse is from 160 to 200, and soft and compressible.

I remember a medical man of about 30, who consulted me under these conditions. He had at times attacks of an anginal character,

* "Transactions of the Medical Society," vol. XIV.

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with considerable pain over the sternum, accompanied by rapid pulse. These attacks lasted two or three days, occurring about once a month, and passed off, leaving the patient tolerably well, though exhausted and weak. In the intervals he used to do his work, and his pulse was quick, but the rate did not exceed 100 beats. This medical man was hard worked in general practice, but at a later date relinquished this for sanitary work and ceased to have these attacks. He died eight years ago from tetanus arising from a wound in his hand from a fish hook. I never was able to detect any increase of the heart's size or valvular mischief; the cardiac sounds were clear and apparently normal. But this was a case I should not think of accepting for Life Assurance.

I remember a lady with a similarly rapid pulse, but in that instance the mitral valve was affected, I believe, with regurgitant disease. She is still alive, and must now have reached the sixties.

Another pulse is the abnormally slow yet regular one, the beats not exceeding 40 a minute, and often falling below this figure. This pulse is usually connected with organic disease of the heart, and often with fatty degeneration of the cardiac walls, though certain medicines, such as digitalis, may temporarily exercise a similar effect. All the cases of this kind I have come across have died suddenly, apparently from syncope.

Intermittent pulse is often met with in Life Insurance, and Dr. Pollock* says "Where there are no irregularities due to cardiac lesions, and the loss of beat is not more than one in 20 or 30, the intermissions may be regarded as harmless, and the life acceptable." Dr. Balfour† says "Intermission is a reflex inhibition of the heart's action through the vagus, of little consequence in youth, because the heart has then a wide margin of reserve, but of serious import after middle life, because the conditions then present accentuate the tendency of persistent intermissions to induce dilatation of the heart." Dr. Balfour continues: "Yet my own experience enables me to say with considerable certainty that we may reckon from 12 to 13 years as the time required for the development of serious dilatation in a middle-aged man leading a life of ordinary activity

* "Medical Handbook of Life Assurance." † "The Senile Heart."

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and having no special worries, reckoning from the time the patient was led to consult a physician for symptoms he hardly regarded as important."

Age always seems to me to be the most important element in determining the value of an intermittent pulse, and in lives under 30 I have frequently found it to be due to over indulgence in tobacco. Many candidates of this description, when postponed for a month and told they cannot be accepted unless smoking is given up, return after a month or six weeks with good pulses free from all intermission. However, it seems to me difficult to lay down hard and fast rules, even in cases of intermittent pulse, and it is best to judge each case on its own merits.

I will end this rather imperfect paper on a very important subject by the following summing-up:—

In considering the question of acceptance or rejection of applicants affected with heart disease, due regard must be had to the following points:

1. *Age*, both present and at time of attack.—Cardiac lesions that appear at 20 are more likely to improve than those coming on after 40, and the greater the age of a candidate, the less probability there is of complete compensation.

2. *Sex.*—Women are less liable to aortic valvular disease than men. Men are less subject to mitral valvular disease.

3. *Occupation and Surroundings.*—Whether these are the same as those under which the cardiac disease was contracted, and whether they are likely to be temporary or permanent.

4. *Habits*, such as the presence or absence of alcoholism, excess of tobacco-smoking, or the use of certain drugs.

5. *Origin* of the cardiac disease, whether in endo- or peri-carditis, or as the result of degenerative processes.

6. *The Nature* of the lesion, and specially whether it be progressive or stationary.

7. *The Amount of Compensation* established to overcome the difficulties of the circulation.

Careful study of the histories of persons affected by the various heart lesions has shown that a longer life is compatible with the

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existence of many of them than was formerly held, yet in the absence of large records it is impossible to reduce the probabilities in all cases to definite figures, and the subjoined conclusions can only be regarded as approximations to assist the medical examiner in his work, which must, after all, be directed to the circumstances of the candidate under examination and to his surroundings and outlook.

1. *Cases of adherent pericardium*, provided there are no valvular lesions, that the muscular walls are sound, and that there is no cardiac dilatation, also that the adhesions are not to the chest wall itself, may be accepted with a moderate addition of from three to five years.

2. *Mitral regurgitation* cases, where the origin is not degenerative and the compensation good, and where there are no dyspnœa and complications, can be accepted with an addition of from five to ten years, according to the age of the candidate.

3. *Cases of mitral stenosis* are less favourable, being liable to cerebral embolism, and can only be accepted if the disease be not progressive, if there be no accentuation of the second sound, no enlargement of the right side from either dilatation or hypertrophy, and no dyspnœa. They can then be accepted on less favourable terms than cases of mitral regurgitation.

Double mitral lesions, however, can only be considered with very large additions.

4. *Aortic valvular disease*, whether regurgitant or obstructive, cannot as a rule be admitted into the category of assurable lives; though favourable instances, where the lesions originate in rheumatic endo-carditis, and the compensation is complete, have been occasionally accepted with large extras.

5. *Cases of cardiac dilatation*, without compensation, cannot as a rule be accepted at all, except when the dilatation is of a temporary nature, such as may follow over-exertion and over-smoking, but even here the case cannot be considered until all dilatation has subsided.

6. *Cases of cardiac hypertrophy* must be estimated with reference to the modes of causation, and no definite rule can be laid down,

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though lives where the lesion giving rise to the hypertrophy is not progressive, the muscular wall in a sound condition, the compensation complete and the vessels healthy, may be regarded as within the pale of Life Assurance, as, for instance, athletes who have given up sports, and women whose cardiac hypertrophy originated in frequent pregnancies, but are now past child-bearing. Here the lives may be accepted with an extra, varying with the age.

7. *All forms of degeneration of the cardiac walls*, fibroid and fatty, must be excluded, and vigilant watch kept against their admission.

8. All forms of *cardiac neurosis* are not equally dangerous, but they are too uncertain in their clinical life history to allow of being admitted among the assured.

A system of endowment, making entire payments before a certain age, would probably protect Assurance Offices and preclude the necessity of large extras.

In conclusion, I will read a note I have received from Sir William Broadbent, to whom I sent a copy of the conclusions, who had every hope of being present this evening. As you know, he is a great authority on heart disease, and takes an interest particularly in prognosis: "I am very sorry that I shall be unable to attend the meeting this evening. ..... I am in thorough agreement with you generally; but should lay more stress on the varying degrees of obstruction and regurgitation. There are cases even of aortic regurgitation on which I should place a very small penalty, while I should refuse others absolutely. Lots of people develop a mitral murmur about 50 who live to 70 and upwards."

Discussion.

The Chairman: I am sure that Dr. Williams has given us ample food for discussion, and we are very much obliged to him for completing his first paper. This one seems to be a very good corollary to the other, and the summary to contain an immense number of propositions, mostly in the way of information, some of which, no doubt, you will discuss at some length.

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Dr. de Havilland Hall: I will first take the question of adherent pericardium. If I remember rightly, in the discussion on Dr. Williams' previous paper, I pointed out that it was impossible to diagnose adherent pericardium if you excluded adhesion of pericardium to chest wall. You might make a sort of a guess at it, but you cannot, with any sort of certainty, diagnose an adhesion of the heart and pericardium. Therefore, these cases do not come under the category of conditions to be considered for Life Assurance. One factor in accepting lives for insurance is the occupation of the applicant, and that I do not think Dr. Williams touched upon very definitely. It seems to me that opposite conditions are required for heart disease and cases where there is any tendency to phthisis. A man who has a family history of phthisis, or who in the past has had some signs of phthisis, if he is living an out-door active life, you might certainly consider, and possibly pass him, with a considerable addition. Now, this active out-door life is not a condition that would be quite desirable in a man with valvular disease. I may mention a case which I had recently before me: a solicitor in comfortable circumstances, able to do his work pretty much when he liked and where he liked. This is the kind of individual we should do well to pass for insurance, even though he had valvular disease. Whereas, if the applicant had been a farmer, or a man engaged in out-door active life, I should have had some doubt in passing him.

The view that Sir William Broadbent holds as to the frequency of aortic stenosis is one not generally held. It certainly has been displaced from the prominent position it occupied in the times of Walshe. I am of opinion that many cases are called cases of aortic stenosis which have no title whatever to be so designated; they are really cases in which a little roughening of the valve produces a murmur, but there is no obstruction. I have passed several cases in which there has been a distinct aortic murmur, but in which there was no sign of cardiac change, and where I believed that I had to deal with a roughened valve. Therefore, I do not attach so much importance to an aortic systolic murmur as some authorities would do. In speaking of the causes of aortic disease, Dr. Williams left

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out what I look upon as one of the most important, certainly in cases of aneurism, namely, syphilis. I think that it plays a very prominent *rôle*, and that one should realise the extreme importance of enquiring as to the history of syphilis in cases of aortic disease. The more I see of post-mortem work the more I am struck with the frequent dependence of aortic disease on syphilis. There is one interesting point in the clinical symptoms of an organic regurgitation which I think Dr. Williams might have alluded to, and that is the loudness of the murmur. All the cases of murmurs which I have heard at a distance from the patient have been examples of aortic regurgitation.

I should be a little more cautious than Dr. Williams in regard to aortic regurgitation. I do not consider I should feel justified under any circumstances in recommending a man with an aortic regurgitation murmur. I grant that there may be cases in which damage has been done, but compensation is fairly well maintained; but at present we seem to know so little about the conditions which may follow upon aortic regurgitation that the safest plan is to absolutely reject all cases of this lesion. The cases which have given me the most trouble in the past, and most anxiety for the future, are those of fatty heart. This is possibly due to the fact that there have been two or three very sudden deaths in my office from this cause. One of these, a man of 49, I examined in consultation with my colleague and another examiner. When we passed this individual, with a small addition of four or five years, I remember making a special note at the time, which I took away with me, because I was dissatisfied with the condition of his heart; but, being the junior, I gave way to my seniors. What I noticed about him was this: feeble impulse and feeble first sound. Six years later he was found dead in bed, and the verdict at the coroner's inquest was "Death from fatty heart." This was just the condition one might reasonably expect. Given a feeble first sound and a feeble impulse, if the condition of the arteries is not satisfactory, that is to say, if the arteries are rather hard, in these cases I think we should be most careful in enquiring into the antecedents and family history of the applicant, because, if we find that he belongs to the class of

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cases so well described by our President in his inaugural address, where there is an early breaking-down history, then I certainly think we should refuse to accept such a life with any premium. The only point I have to notice about the remarks Dr. Williams made in connection with the pulse is as regards intermission. I am disposed, certainly in patients under 50, to look upon an intermittent pulse, provided it is not very frequent, *i.e.*, where there are not more than two intermissions, we will say, in 15 seconds, as possibly depending upon dyspepsia or a gouty condition. I have certainly seen it induced in many persons by indigestion, and going away when the patient's digestion has been put in better condition. I have, therefore, not attached much importance to an intermittent pulse. I think an irregular pulse is a much more serious thing from an insurance point of view than an intermittent pulse. Sir William Broadbent's remarks are very interesting, but I should attach more value to them if he had been an adviser to an insurance office himself. I cannot help thinking that the people who have not the responsibility of being medical advisers to a Life Assurance Office take a rather more cheerful view of assurance than those with that responsibility.

Dr. E. Symes Thompson: I have a few observations to make, Sir, and the first is this: that, whereas the extra rating that should be suggested for well-defined diseases of the heart is a matter about which we can speak with confidence, the extra rating which we can apply in cases of vague, ill-defined, defect of heart is a much more difficult thing to estimate. When we compare the conditions of heart disease in relation to prognosis, the experience gained in insurance practice, with the conclusions to which we have arrived during the last 20 or 30 years, we can estimate with fair confidence the prospects of life in cases of definite heart disease, whether of the aortic or the mitral valve. But I regard it as a matter of much greater difficulty to judge about conditions of degeneration of arterial wall, of adherent pericardium, and so forth. As to adherent pericardium, I entirely confirm what Dr. de Havilland Hall has said. The circumstances under which one would be bold enough to state

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as a matter of fact that a patient was suffering from adherent pericardium, when he came to you for insurance, would be very exceptional indeed. Of course, when we have a patient under our care and can watch over him and know all about the history, we may be in a position to form a fair surmise that the pericardium is adherent; but I do not recollect any instance in which a patient came to me in insurance practice in which I was bold enough to state that adherent pericardium existed. I should, therefore, be disposed to put aside the first conclusion of Dr. Williams. When we come to deal with the question of degenerative change in the heart we are still in what I should regard as the indefinite class of case. We may form a judgment that there is a degenerative change in progress, but when we come to define whether it is of a fibroid or a fatty nature, I believe we should often be found at fault in our decisions. As a specimen of the indefinite, or ill-defined, class of case, which is more difficult to assess and more unsatisfactory from an assurance standpoint than cases of pronounced valvular lesions, I would mention a case examined for assurance this afternoon.

A. B., a traveller, aged 40, assured at ordinary rates 10 years ago. Father and mother both died at the age of 40 from unknown causes. No history of illness. Height, 5-ft. 5. Weight, 11 stone (an increase of two stone in 10 years). Tendency to accumulate abdominal fat. Liver full. Venules over costal margins large. Bile acids in urine. Heart's action hurried, flappy, diffused sounds. No increase of cardiac dulness, and no murmur. Complexion rather flushed. Tongue dented.

Although the evidence of actual cardiac disease was lacking in this case, the family history, occupation, habits and aspect led me to refuse the applicant. I do not suppose anyone could have passed him, even with an addition, without very great risk, even if the family history had been good; but in the presence of such a bad family history I think a case of this sort could not wisely be accepted, although I should doubt whether there was any definite disease in the heart. Possibly it is degenerated like the rest of him; all the tissues having undergone degenerative change. I regard this as one of those cases of ill-defined degenerative change in the cardiac

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tissues, which are much more risky than cases which are well defined.

Dr. Pollock: What are his habits?

Dr. Symes Thompson: His habits were stated to be favourable. He drank beer, but never spirits. His occupation was that of a traveller, which we all recognise as not being a particularly satisfactory occupation; and this, I think, illustrates the class of case which I have in my mind.

Now, a word or two about the relative danger of mitral and aortic disease. In our insurance statistics we meet with so many more cases of mitral than aortic disease, that it is extremely difficult to form a judgment about the latter. Now, when I analysed the lives that have been rated up for cardiac ailments in the Equity and Law Life Assurance Office, I found that almost all were either cases in which the nature of the valvular lesion was not stated, or cases of mitral disease. We scarcely had any cases of aortic disease. I have once or twice recommended cases of aortic obstructive and aortic regurgitant disease to be accepted, but only when the circumstances were extremely favourable. I believe that as time goes on we may accept more of these cases, especially if we adopt the plan suggested in the last paragraph of this most interesting abstract, viz., treat them as short endowment cases, to terminate at the age of 50. The worst of that course is, that by adding risky cases of this kind to the endowment class, we remove the endowment class from the extremely favourable condition in which it now stands. I suppose the experience of most offices is that the claims on the endowment class are extremely small, and it is because the claims are so small that the office continues to issue them, and issue them with satisfaction. When we associate with the ordinary type of endowment cases a number of risky lives, we shall, of course, tend to lessen the extremely satisfactory nature of the endowment class. I do not say that this is necessarily an evil, but the directors of many of our companies are rather disinclined to grant the privileges of endowment to those who they feel have none of the risk but all the benefit

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which is to be gained by the insurance. If a man lives to a good old age, the office makes a very large profit, but if a man continues to insure until the endowment matures, he gets all his money back with the profits that have accrued, so that the office has not an opportunity of making much profit over the transaction. The actuaries rightly point out to the directors, under such circumstances, that, inasmuch as the risk is very much less, it is a desirable class to encourage. But if we make those risks unsatisfactory by the addition of a number of cases of heart disease and others likely materially to shorten life, we somewhat spoil the results in the endowment class.

I must hurry on, because I am anxious not to waste time by discussing these technical points, only I should like to say one word with reference to occupation. I think that, while Dr. de Havilland Hall's observation is true, that it may be safer for a man with heart disease to be leading an arm-chair life, we must not forget it is in the active open-air exercise that the tissues are maintained to a good old age in a healthy condition. Where the danger is from degenerative change, it is quite a question whether we should not be better off if our patient were living the life of a farmer than if he were living the life of a stockbroker or a solicitor. I will not delay you any longer. The subject is so full of interest that one would like to talk the whole thing over; but I must conclude by thanking Dr. Theodore Williams very much for the most interesting paper which he has read.

Dr. J. E. Pollock: I think, Sir, that this question is the most important that could be brought before our Association. We are so placed that we have on a few minutes' examination by physical signs and careful observation, to make out injuries to the most important organ of the body, and though my friend Dr. Williams has given us an admirable treatise on heart disease, we have to apply it in the actual circumstances of daily life. I believe his deductions are fair. I cannot go entirely with him in all, but I believe they are the deductions which our reason and our practice would approve. To take them at all in detail, I would myself not accept any case of established and recognised aortic disease, whether

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it be stenosis or regurgitation. We have to consider in all heart ailments what is the likely process as regards duration. Now aortic cases progress towards their inevitable end more quickly than mitral cases, and comparing mitral and aortic, I think you will all agree with me that the mitral tends to prolongation and the aortic to shorter duration. This is an important point in considering cases presented to us every day. I am in the habit—and I am not shaken in that belief by anything I have heard—of rejecting all aortic cases that are well established. Of course, I know there is a source of error; you will find at the second space right or left of the sternum a murmur, and you are apt to say perhaps it is anæmic, it is somewhat rough, perhaps it is aortic, and possibly it is pulmonary. To bring the case to the practical work of every day, all such in which we are in doubt as regards an anæmic condition should be clearly deferred for one, two, or three months, so that the person may go away and come back in a rehabilitated state of health. But where, after such time, we find a persistent and harsh murmur in the aortic region, I should undoubtedly decline the case, and I never have accepted any such.

As regards the mitral valve, it is the one which we have mostly to deal with in practice, because the frequency of mitral regurgitation is beyond that of any other cardiac lesion. I think the whole question for us is, whether there is sufficient hypertrophy to compensate the altered state of the valve. Now, if we read the books which were written when I was a young man, we find that hypertrophy was treated as a disease. Take Hope, and even Latham, and read them, as I have been doing lately, and you will find they were dealing with hypertrophy as a disease without any reference to its cause. We know that in 99 cases out of 100 the cause of hypertrophy is an obstacle in front of the ventricle, which the muscular apparatus strengthens itself in order to overcome. But hypertrophy used to be treated as a disease. They put a man to bed, gave him tartrate of antimony, bled him from the arm, and they sometimes put a seton in; I have done it myself with my own hands. That was the teaching of former times, and was not my fault. Now we have learned the lesson that it is a compensating and healthy

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condition. I am meeting cases every day, and I have several on my hands at present which I have examined week after week, certainly year after year, and found the heart of the same size, the ventricle hypertrophied, and a mitral murmur, which varies from time to time in intensity with the power of the ventricle behind it. I like a well-pronounced mitral murmur. We all, I think, like well-pronounced heart murmurs in forming a prognosis of the case. What is the real danger in heart cases? Failure. What we have to consider mainly is failure, failure of the muscular walls, whether it be from fatty degeneration or dilatation of the ventricle. So long as the propelling power is maintained, and the valve lesion is overcome by the hypertrophy, the patient is safe, but the moment he begins to fail in ventricular power, the heart becomes dilated. We find it enlarged, and we know by the feeble impulse and imperfect first sound that the walls are getting thin, and we know what the progress of the case will be. All the mechanical phenomena of venous congestion appear, and effusions into the serous cavities ensue, and the patient dies. But what we have to dread as medical officers is failure of heart power. In practice I would dismiss the other cases altogether, but I should take mitral cases with sufficient compensating hypertrophy, and assign them a certain equivalent in money, and I should not place it very low. We should remember that there is an age at which degenerations occur. If the man is young, he may have a healthy life before him, but when he comes to be over 50, his heart may most likely degenerate. Therefore, if we are dreading a decline in the muscular power of the heart, and the man is approaching the age of 50 or onwards, we know that dangerous structural changes are very likely to occur, and then it would take a very large sum indeed to compensate the extra risk.

I do not attach importance to occasional intermissions of the pulse in a healthy person of correct habits, if the cardiac sounds are otherwise normal. It may be regarded as neurotic, and it is a curious fact that it often disappears on the supervention of a feverish attack. But most properly Dr. Hall has pointed out that irregularity of pulse has a more important meaning. An irregular pulse—one, two, three, and then one, two, three, four—that kind of pulse—is a

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very different thing from a pulse that loses a beat once in 20, 30, or 40 times. Irregularity would cause me to reject a life, but simple intermission would not forbid acceptance. I did not mean to speak at such length, but I must return my thanks to Dr. Williams for the elaborate way in which he has stated his views on heart disease and its bearings on Life Assurance.

Dr. Hingston Fox: Dr. Williams' conclusions seem to lean favourably towards rheumatic heart disease, in contra-distinction to degenerative heart disease, and he especially mentions this in regard to lesions of the aortic valves. But is not the probability of further rheumatic trouble an exceedingly important element in arriving at the prognosis of these rheumatic heart cases? When the proposer has suffered from rheumatic fever in recent years or more than once (even if the attack has only been slight), and it has left heart damage, the prospect of further rheumatic trouble is so serious that I should not be disposed to accept such cases, even at a considerable advance. Many death claims come before me, from acute rheumatic heart trouble, in cases which have been accepted perhaps on tabular rates, or at a slight extra, and in which rheumatism had occurred once or more before entrance. So that the probability of a recurrence of rheumatism is a point of primary importance in attempting to make a prognosis in cases of rheumatic heart disease. The general conclusions of Dr. Williams strike me as being more favourable to heart cases than I should feel able to follow, with present knowledge and experience.

Dr. Glover Lyon: At this late hour I would only make one or two remarks, and some of the remarks have to do with the late hour. Our late President, after Dr. Williams' last paper, suggested that in a paper of such great completeness the author should not read it right through, but give the points which immediately affected Life Assurance. A good deal of Dr. Williams' paper, extremely interesting and important as it is, had no very direct bearing on Life Assurance, but formed an able *résumé* of general medical knowledge concerning heart disease. When we meet

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together, I think we should take these points for granted. We should then have more time to consider the points immediately concerning Life Assurance. I should like to ask Dr. Pollock whether he would ever take a case at ordinary rates of intermittent pulse, while this irregularity of circulation continued. I find Dr. Williams' mode of procedure differs very much from the National Mutual Life Office and the old Mutual for the last 30 years.

Dr. Pollock: As regards intermission of the pulse, whether I should accept such a case on first examination, I may say that I have accepted many where the person was healthy, there was good arterial tension, and there were no signs of degeneration. I have accepted cases also where the intermission was 1 in 15, 1 in 20 and so on, and there was no other irregularity; but that is a very different thing from what Dr. de Havilland Hall was describing as irregularities, which are very serious, and which I would not accept at all. By irregularities I mean marked alterations in the rhythm.

The Chairman: Gentlemen, I can only add my cordial thanks to Dr. Theodore Williams. I do not quite agree with Dr. Glover Lyon. I think the completeness of a paper is one of its great merits. I was rather astonished at the very favourable aspect of heart disease generally. I should not have thought of taking aortic disease. I do not think I ever saw a simple case of aortic obstruction, except of aneurism or very marked double aortic murmur. If by aortic obstruction is meant a slight systolic murmur at the second cartilage, and a certain amount of hypertrophy, I should think that is hardly a bar to acceptance. But mitral stenosis I should rate up, as of rather more importance than it seems to be rated here.

Dr. Theodore Williams: I should rate it up very strongly.

The Chairman: Very often you get mitral stenosis, more particularly in women, which is not discovered until quite accidentally afterwards. It comes on particularly after the exanthemata, particularly after scarlet fever, and it is much more likely to cause back

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pressure. I am only throwing these hints out, having had them suggested to me by the few cases I have seen. It has almost seemed from the statistics of the last paper that it was rather a good thing to have heart disease in order to be healthy rather longer than you otherwise might have been, because you are very careful. That reminds me of a statement that astonished me immensely in this room, made two seasons ago by Mr. Jonathan Hutchinson, that on the whole he almost looked upon it as rather a good thing for a young man to have syphilis, because it made him careful. I have nothing to add further, but will ask Dr. Theodore Williams to kindly reply to the very excellent criticisms we have had on his paper.

Dr. Theodore Williams in reply said: I endeavoured on this as on the last occasion to draw up conclusions which would admit of discussion, as this is one of the principal objects of the Association. With regard to the conclusion about adherent pericardium which I introduced from the last paper, I must admit I do not quite agree with my colleagues. I know cases where apparently the adhesions are not very marked, but still, where you see an apex decidedly out of place, and you have a clear history of pericarditis, and you note certain depressions which follow the rhythm of the heart, I hold you are warranted in drawing a conclusion of adherent pericardium. As regards occupation, I must draw Dr. de Havilland Hall's attention to the fact that I did call attention to it in the last paper. Syphilis also was one of the general causes of valvular disease which I thought I had cleared off, and did not propose treating of on this occasion. It is quite true that syphilis has to be considered, but I always looked upon it more as a cause of aortic aneurism, which I have not touched upon in my paper at all, rather than of valvular disease. Then about the loudness of the aortic regurgitation murmur. I quite agree that it is sometimes a very loud murmur indeed, but my description is to that effect. As to rejecting all aortic valvular cases, I think my sentence pretty well covers what Dr. Pollock says. It is—"Now taking a general view of aortic valvular disease, and bearing in mind the fact that it is usually due to degenerative disease, which may extend

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to both heart and arteries, and that sudden death frequently occurs from one form of it, there seems to be no alternative but to adopt the general rule of rejection." All I say afterwards is—"Only accept such cases as upon examination present exceptionally favourable circumstances." By that I mean, supposing, for instance, that there was very slight incompetence, a mere leak, as it were, in the aortic valve, and very good compensation indeed, such a case might possibly be accepted with very large extra. But the rule is decidedly, rejection. In reference to Dr. Symes Thompson's remarks about endowment, I think it would be a good thing to do something in that way for valvular cases, but at the same time it is a pity to spoil that interesting class which some of our actuaries are always ready to propose as a form of insurance, which will apparently cover every risk. I am very much obliged for Dr. Pollock's criticisms, as they have very great weight indeed. I quite agree with Dr. Pollock as to the different duration of mitral and aortic cases. The more one sees of mitral cases the more one is inclined to accept them, and to regret declining them outright, but, like most of my colleagues, I have fought shy of aortic cases. In reference to the intermittent pulse, I alluded to and quoted, if you will remember, Dr. Pollock's sage words on this subject, and I do not think I expressed a very strong opinion one way or the other; but I quite agree with him that a pulse of marked irregularity must be rejected.

Dr. Hingston Fox asked me about the rheumatic origin of aortic disease, whether I was not too favourable in those cases. Rheumatic fever, as far as we know, is limited to certain periods of life. You do not get old people suffering from acute attacks of rheumatism. They may have chronic attacks, but they do not as a rule get acute attacks. What I mean is, that you find a certain number of young people, who have attacks of acute rheumatism, perhaps more than one, and these, after the age of 30, cease. These candidates come with a history that they have been for some years free from rheumatism, and are a class, which I regard on the whole rather favourably. The valvular lesions, if they exist, in my experience, do not change or change for the better. They are very like what Dr.

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Pollock says about the mitral cases: they either keep about the same or get rather better. We know that 30 per cent. of aortic valvular cases are due to rheumatism, and, if we are going to treat any aortic cases favourably, those, I think, should be the ones. With regard to Dr. Glover Lyon's remarks, it seems to me best in dealing with a subject like diseases of the heart, to clearly define the different affecting lesions. Otherwise I should be asked, what do you exactly mean by aortic stenosis and so forth. I therefore thought the only way was as briefly as possible to describe them, but I trust I was not too prolix. Our chairman has alluded to the prognosis of mitral stenosis, and thinks, on the whole, I am rather too favourable. Now, if you look at the progress of medical opinion in reference to heart disease and its prognosis, during the last 30 years, I believe you will find it has undergone a distinct change. The cases published by Sir Andrew Clark, Sir Dyce Duckworth, and others, show a number of examples of mitral and other valvular disease, mitral chiefly, which were, to a great extent, hopeful, and might be accepted for insurance. If my paper bears some imprint of that, I am only going with the growing opinion of the day. My own feeling is, that the prognosis of heart disease is far more favourable than it was thirty years ago, and that we ought to turn that to account in insurance practice. I have tried to be as careful as possible in my conclusions, and not go beyond the limits of prudence. I must thank you again, Sir, and the Association also, for receiving the paper so kindly, and criticising it so thoroughly.

The meeting then closed.

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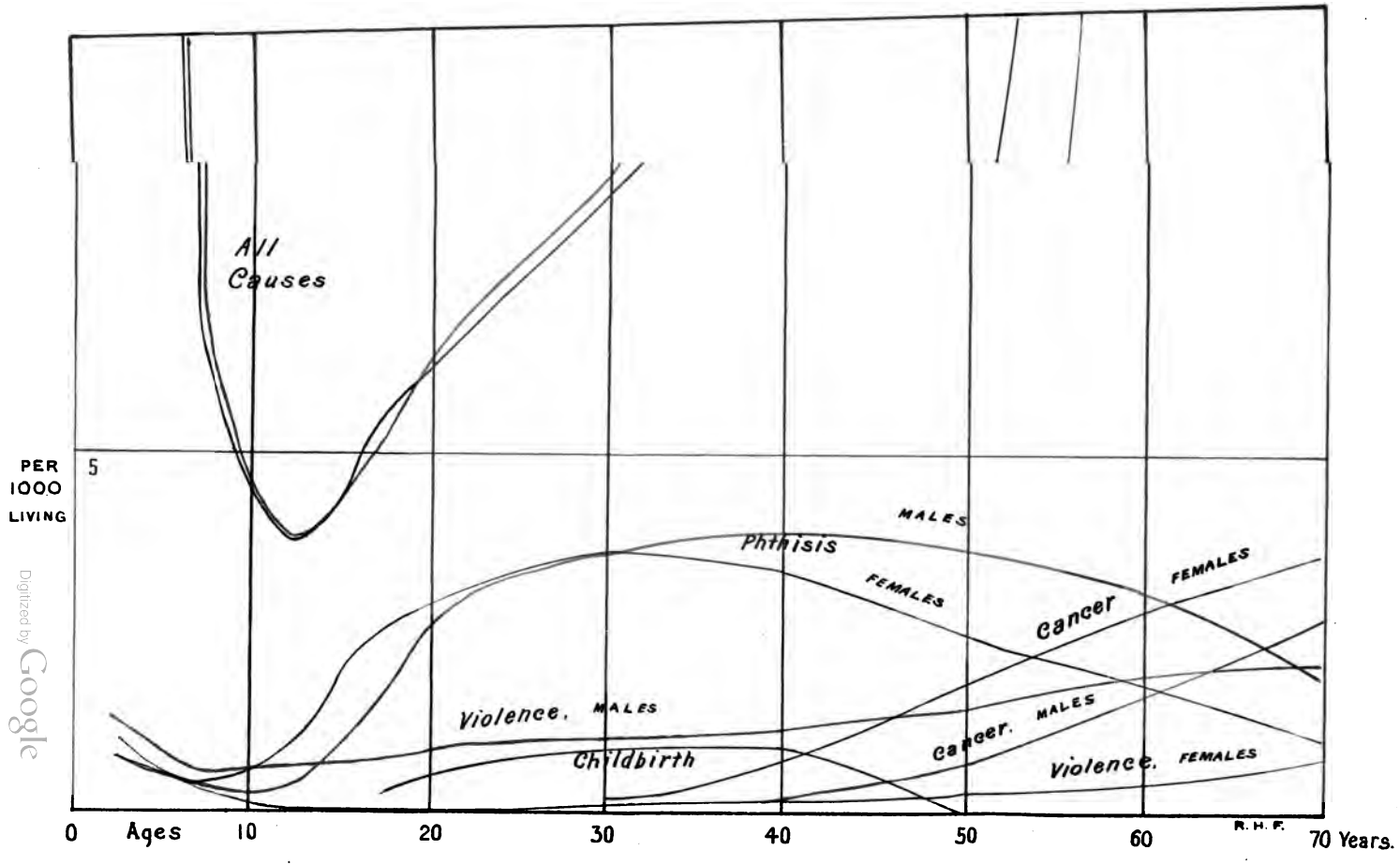

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"ON FEMALE LIVES."

By **R. HINGSTON FOX**, M.D., M.R.C.P.,

Physician to the United Kingdom Temperance and General Provident Institution, and to the Friends' Provident Institution.

Read before the Life Assurance Medical Officers' Association, May 4th, 1898.

Dr. HERMANN WEBER, *President, in the Chair.*

I.—*Characteristics of Female Lives in the General Population, as shown by the Mortality Returns.*

The tables of mortality for England and Wales invariably show an average lesser mortality of females, amounting to about 2·0 per thousand; thus, the average annual death-rate for men in the period from 1861 to 1890 was 22·16 per 1000; and for women 19·76.* This difference has varied but little during the sixty years since accurate registration was commenced, and Dr. Farr has shown that it obtains in separate districts as well as in the country at large.† The lower death-rate for females appears to be the rule in most countries, although in France it was formerly said to be reversed,‡ as also in some populations under special conditions, such as that of the Society of Friends.§

When the ages of the population are taken into account, the relative mortality of the two sexes is found to vary at different periods of life. Thus, the greatest difference is to be found in infancy and early childhood, infants under one month dying,

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* *Supplement to 55th Annual Report of the Registrar-General.* The death-rates for the period 1881-90 were 20·22 and 18·01. I use the terms "death-rate" and "mortality" as synonymous, and always as indicating the number of deaths per 1000 living at the specified age.

† *Supp. to 35th Annual Report of the Registrar-General.*

‡ Demonferrand, quoted in *Journal of Institute of Actuaries.* XIX. p. 191.

§ See a paper by my father, Mr. J. J. Fox, "On the Vital Statistics of the Society of Friends." *Trans. Statistical Soc.*, 1858.

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according to the English Life Table, in the proportion of 13 boys to 10 girls.* The difference becomes less as life progresses, and between the ages of 5 and 35 the mortality of the sexes is nearly equal, women in some epochs dying in slightly larger proportion than men. After the age of 35, the female sex has again the advantage, and the difference continues to increase to the end of life, never, however, reaching quite the same relative magnitude as it attained in infancy.

According to the third English Life Table of Dr. Farr, which was based upon the registration returns down to the year 1854, the mortality of women during the age periods from 10 to 35 was distinctly higher than that of men.† Thus, taking the ages from 20 to 35, which are of especial interest for Life Assurance, there were from 104 to 106 deaths of females to every 100 deaths of males occurring to an equal number of each sex entering on each year of life between these ages.‡ The difference is not great, but when contrasted with the lesser mortality at all other ages it is very significant. The experience of subsequent years since Farr's table was constructed has not entirely confirmed his statement. The average death-rate has declined much in the past twenty years, especially for the earlier half of life, and, concurrently with this diminished death-rate, the female mortality for the age period from 10 to 35 has become nearly the same as that of males. There is no longer the uniform slight excess of deaths which Farr showed. It would seem that the diminution of the death-rate has affected women slightly more than men, so as to produce this result. It is therefore now more accurate to say that the mortality of men and women is about the same between the ages from 5 to 35, although from 10 to 20 the women still generally show an excess of deaths.

Two features, then, are shown by examination of the returns of the general population. Firstly, that the mortality of females is materially less than that of males at most ages, but especially in early childhood. Secondly, that in later childhood and during

* *Supplement to 25th Annual Report of Reg.-Gen.*

† *Introduction to English Life Table No. III.*

‡ Quoted in Meikle's "Observations on the Rate of Mortality of Assured Lives as Experienced by Ten Assurance Companies in Scotland" to 1863, p. 16.

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adult life as far as the age of 35, the mortality rises to equal or exceeds that of men.

What are the causes of these characteristics of female life? It is commonly said that the comparative freedom from exposure to accidents, to chills, and to dangers connected with various trades and other occupations in life, gives to women a lower mortality than that of men. The lesser use of alcohol by women is thought to contribute to this effect. It may be stated in support of the former contention that the death-rate from "violence" (accident, suicide and homicide) is, throughout life, steadily higher for males than for females. The excess rises from 0·27 per 1000 living at ages 5 to 10 to a maximum of 1·35 per 1000 at 55 to 65; above 75 there is little difference between the sexes in this respect (*see* Table I.) Moreover, the death-rates from diseases of the respiratory and urinary systems, which must be in both cases largely influenced by exposure to chill and over-fatigue, are much higher during the latter half of life amongst men than amongst women.

The causes so far alluded to would make up, at any rate, a large part of the difference shown to exist in the average death-rate of the two sexes. It is therefore probable that a principal cause of the lower mortality of women during adult life is in their freedom from many of the risks which beset the more active life of men. In stating this we must not forget the hard drudgery, and unwholesome conditions of life of many of the poor women who make up the mass of the population, and their indoor habits, which contrast unfavourably with the more open-air life of men.

But how shall we explain the lower mortality of females than of males in childhood—a difference which is extremely well marked, and which begins from birth, and is greatest in the first month of life? At that period surely male and female infants are treated exactly alike.

It is, of course, only putting the same fact in another way to say that male infants are much more liable to death than female. Quetelet made this observation long ago, and he infers that there is a particular cause of mortality, which affects male children by preference, before and immediately after birth. He states that the

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sex of stillborn children is in the ratio of about 14 males to 10 females.* The greater average size and weight of male infants may account for this in part, rendering gestation and parturition more difficult, and so tending to the injury of the fœtus.†

TABLE I.—MORTALITY PER 1000 LIVING ACCORDING TO SEX AND AGE. ENGLAND AND WALES.

Average of 30 years, 1861-90, compiled from the Registrar-General's Returns. (Supplement to 55th Annual Report.)

AGE IN YEARS.	ALL CAUSES.		PHTHISIS.		CHILD-BIRTH.	CANCER.		VIOLENCE.	
	m.	f.	m.	f.	f.	m.	f.	m.	f.
0–	67·66	57·84	0·77	0·74	—	0·02	0·01	1·36	1·08
5–	6·72	6·40	0·34	0·39	—	0·01	0·01	0·53	0·25
10–	3·70	3·76	0·48	0·86	—	0·01	0·01	0·60	0·11
15–	5·23	5·48	1·72	2·44	0·15	0·02	0·02	0·74	0·13
20–	7·16	6·75	3·10	3·14	0·64	0·03	0·03	0·87	0·11
25–	8·98	8·53	3·61	3·57	0·92	0·07	0·17	0·98	0·14
35–	13·18	11·39	3·95	3·34	0·86	0·25	0·77	1·24	0·20
45–	19·50	15·39	3·74	2·46	0·05	0·75	1·78	1·53	0·31
55–	34·14	28·24	3·14	1·78	—	1·70	2·80	1·90	0·45
65–	68·81	59·90	1·92	1·10	—	2·73	3·60	2·14	0·79
75–	165·30	152·48	0·65	0·42	—	3·05	3·63	2·70	2·30
All Ages	22·15	19·76	2·17	2·04	0·31	0·33	0·62	1·09	0.36

There must be something in the physical endowment of females, at any rate in this country, which renders them from the very outset less liable to fatal disease than males. Whatever it may be,

* Quetelet: "Treatise on Man." Translated by Knox, Edinburgh. 1842. p. 30.

† The weight of new-born males is to that of females about as 11 to 10. *Ibid.*

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it ceases to operate for several decades after the age of 10 years, or else it is overcome by some other influences which increase the mortality to an equality with that of the other sex.

What, then, is the cause of the relatively increased mortality of females at the ages from 10 to 35 years? The first suggestion is that it is due to the danger attending childbirth. This makes, indeed, an important contribution to the death-rate of women in early adult life. Thus, between the ages of 25 and 45, it accounts for nearly one in 10 of the total deaths of women, and if the deaths from this cause were removed, the mortality would fall well below that of men. We shall consider the risks of childbirth in more detail presently. It is plain, however, that such risks do not answer for the increased mortality which is already shewn by females in the decade from 10 to 15 years, although they may have influence in the next decade, many early marriages taking place before 20 years of age, and premature childbearing bringing naturally more danger to the life of the mother.

We must look elsewhere for the cause of the increased mortality of females in later childhood and youth. On examining the tables in detail we find that the increase is actually spread over a good many causes. Thus, the deaths from most zymotic diseases, and from disease of the heart and vessels, are slightly more numerous among girls than boys between the ages of 5 and 20 years. But there is one cause of death beside which all these are insignificant; and it contributes most to the increased mortality. I allude to phthisis. This is a point of much interest, and it must receive a little fuller consideration.

When the rate of mortality from all causes for the whole of life is studied, it is at once seen that after the high death-rate of infancy and early childhood is passed, there follows a period of quiescence, when for several years the losses by death are at a minimum (*see* Diagram). Between the ages of 9 and 14 years the death-rate is very low, dropping even in some years under the ratio of four deaths per 1000 living, as contrasted with the average rate of 21 per 1000 for all ages. The boys and girls who have survived the risks of infancy are now growing rapidly, and at the same time

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undergoing that development of the organs of reproduction, with all its attendant changes, which we know as puberty.* This period of active development is liable to dangers of its own, yet it is in the main a quiescent period as far as risk to life is concerned. It would seem that Nature provides a sort of immunity for this epoch of growth, until, in the words of Dr. W. H. Rumsey, "the body becomes developed, and the reproductive function is established, when the chances of destruction again increase, the succession of the species being thus secured." †

Amongst the disorders which in steadily increasing volume attack life after puberty is passed, the most deadly by far is phthisis. The deaths from phthisis under the age of 15 years were from 0·3 to 0·8 per 1000, but after that age they increase to one, two, three and nearly four per 1000 in the fourth decade of life, accounting indeed for about one-half of the total deaths of both sexes between the ages of 15 and 35 (*see* Table I.) The "hateful consumption" of the Father of Poetry abides yet as the scourge of our youth and middle age. But the scourge does not descend with equal stroke upon the two sexes. It begins its ravages upon females about two years earlier than on males. If we mark out the curve of the female death-rate from phthisis, we see it ascending a little in advance of the male rate, reaching its maximum near the age of 30, 10 years earlier than with males, and declining much sooner than theirs in the latter decades of life.‡ Why does phthisis begin to effect women earlier than men? Probably because women come to maturity

* Dr. Clement Dukes writes of "these years when their growth and development is enormous, namely, from 11 to 14, when they leap as it were from childhood to womanhood at a bound."

† Newsholme's "Vital Statistics." p. 105. Dr. J. E. Pollock considers that much phthisis dates from this epoch. He writes: "The age of puberty is perilous to growth if organic life be not in full activity, and in those hereditarily predisposed to tubercular disease is the second great period when an invasion of the latter is to be apprehended."—"Elements of Prognosis in Consumption." p. 294. Of course the *deaths* would not occur until some years later.

‡ Dr. Reginald Thompson, in "Family Phthisis," and Drs. C. J. B. Williams and C. Theodore Williams in "Pulmonary Phthisis," show, from statistics of cases observed, the earlier occurrence of the disease in women. In Dr. Thompson's tables of hospital in-patients, the earlier fatality appears in those in whom the disorder is acquired; in those with a consumptive family history there is not much difference between the sexes. The Drs. Williams' well-known observations were based on 375 women, out of a total of 1000 upper-class consumptive patients: the females were attacked three and a half years earlier, on the average, than the males, and the duration of the disease was one and a half years less. Hence the deaths took place about five years earlier in females than in males.

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earlier, puberty occurs sooner, and growth ceases at an earlier age than in the other sex. It is possible that a more indoor life may also have some influence. The increased mortality from phthisis before the age of 20, and that from puerperal causes subsequently to that age, are together sufficient to account for the higher death-rate of women between the ages of 10 and 35.

TABLE II.—MORTALITY OF ASSURED LIVES IN 30 AMERICAN LIFE OFFICES TO 1874, PER 1000 LIVING EXPOSED TO RISK IN EACH PERIOD OF AGE.

Compiled from "System and Tables of Life Insurance," by Meech.

Ages in Years.	All Causes.		Consumption.		Childbirth & Puerperal Diseases	Cancer.		Diseases of Breast and Uterus.	Accidents, Injuries, and Suicides.	
	m.	f.	m.	f.	f.	m.	f.	f.	m.	f.
9½–	7·57	—	1·20	—	—	—	—	—	0·97	—
19½–	7·48	10·47	2·27	2·64	1·93	0·02	0·03	0·64	0·90	0·26
29½–	7·60	10·14	1·96	2·40	1·36	0·06	0·08	0·50	0·83	0·19
39½–	9·75	10·65	1·74	1·98	0·63	0·17	0·46	0·62	0·90	0·15
49½–	14·60	13·47	1·58	1·62	—	0·46	0·68	0.64	1·07	0·34
59½–	27·04	26·27	1·76	1·60	—	0·86	0·64	0·64	1·11	0·48
69½–	53·80	63·02	1·91	—	—	1·66	2·46	1·23	1·42	1·23
79½–	138·97	—	1·51	—	—	—	—	—	—	—
All Ages	10·20	11·49	1·86	2·15	1·04	0·18	0·27	0·58	0·91	0·20

II.—*Mortality Experience of Female Assured Lives.*

The records of Assurance companies do not show a lessened average mortality for female lives, but, on the contrary, an increased mortality, which prevails until about the 50th year.

The mortality experience of the seventeen British offices to 1837, published in 1848, first brought this fact to light.

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It was confirmed by the fuller experience of twenty British offices down to 1863, which included 130,243 males, of whom 20,521 died, and 16,604 females with 3,335 deaths. Only "healthy lives" are here referred to. The female death-rate, although con-

TABLE III.—MORTALITY OF ASSURED LIVES ACCORDING TO SEX AND AGE, PER 1000 LIVING EXPOSED TO RISK IN AMERICAN AND BRITISH OFFICES.

(Meech: "System and Tables of Life Insurance." p. 34.)

Ages in Years.	30 American Offices.			20 British Offices.		
	Males.	Females	Difference.	Males.	Females	Difference.
20—25	6·9	11·0	—4·1	6·9	8·5	—1·6
25—30	6·7	10·0	—3·3	6·9	11·8	—4·9
30—35	7·1	10·5	—3·4	8·2	11·3	—3·1
35—40	8·0	10·0	—2·0	9·5	12·1	—2·6
40—45	9·4	10·5	—1·1	10·7	12·8	—2·1
45—50	11·0	10·6	+ 0·4	13·6	13·9	—0·3
50—55	14·3	13·4	+ 0·9	17·4	15·7	+ 1·7
55—60	19·4	18·3	+ 1·1	24·0	20·2	+ 3·8
60—65	27·6	23·9	+ 3·7	34·8	28·6	+ 6·2
65—70	39·3	40·4	—1·1	50·2	43·7	+ 6·5
70—75	56·3	47·8	+ 8·5	73·3	68·4	+ 4·9

siderably less than in the experience of the seventeen offices, still much exceeded the male rate prior to the age of 45 years.*

The ten Scottish assurance companies (part of the twenty alluded to), dealing with 82,334 males and 8,864 females, found that the average rate of mortality of the males was 15 per 1000, and that of the females 18·3.†

* "Mortality Experience of Life Assurance Companies Collected by the Institute of Actuaries," 1869. pp. 26, 31.

† Meikle, *op. cit.* pp. 6, 17.

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The thirty American offices, in the period terminating 1874, recorded 982,734 males, of whom 44,485 died, and 44,795 females, with 2,058 deaths. The death-rate of the males was 10·2 per 1000, that of the females 11·49.* (*see* Tables II. and III.)

In considering the cause of this increased death-rate of female as compared with male assured lives, we must remember that nearly all the lives enter as adults. Thus the average age of women on entry in the Scottish offices was 37·8 years.† Childhood is not represented, and it is in early childhood that the female mortality in the population is at its lowest relatively to the male mortality. If we cut off the epoch of childhood, we should find the average death-rate for females in the general population to be only a little below that of males. Assured female lives, however, show a marked excess over the male death-rate. This indicates that female lives are selected for assurance in some way unfavourably to the offices, as compared with the selection of male lives. As factors in this selection must be included both the motive for assurance and the efficiency of the medical examination at entrance. These points will be alluded to again.‡

The records of the Assurance offices accord with the registration returns in showing an augmented death-rate among women in early adult life. The augmentation is, however, much greater than that found in the population of England and Wales. Neglecting the age period 15 to 20 years, little represented in assured lives, we have an excess of the female over the male death-rate during the age periods from 20 to 45, such that the female rate is more than one-third higher than the male. Thus, whilst the male death-rate is shown by the 20 British offices as about 8·4 per 1000 for this period, the female is 11·3. And, similarly, the thirty American offices return a male death-rate of 7·6 and a female of 10·4. The female loss is spread over the whole of this age period from 20 to 45, although

* Levi W. Meech—"System and Tables of Life Insurance." Norwich, Conn., U.S.A., 1881. pp. 29, 192, &c.

† Meikle, *op. cit.* p. 17.

‡ The excess of deaths in female assured lives appears to be spread over many causes. In the Scottish returns it drew its largest quota from diseases of the stomach and liver, childbirth and other disorders of the reproductive organs, diseases of the brain, also of the blood vessels after the age of 45, and of the lungs before the age of 35.—Meikle. p. 48.

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somewhat greater in the earlier decades. It is clear either that the causes of the increased mortality of females at this period of life in the general population operate more strongly in the case of those whose lives are assured, or that there are other superadded causes which increase their effect. As, however, the excess of deaths attaches to exactly the same age period, and after that is passed we find that, as in the country at large, the female life becomes somewhat the better of the two, it is probable that the same causes operate. Moreover, as we shall see, the proportion of deaths ascribed to childbirth is greater in assured lives than in the population.

III.—*The Mortality of Childbirth in the General Population.*

The Registrar-General, in his Annual Reports, combines his two causes "puerperal fever" and "accidents of childbirth" together under one heading of death from childbirth. No attempt is made to follow the Royal College of Physicians in separating "puerperal fever" into puerperal septicæmia, pyæmia, and sapræmia. In this paper the same plan will be pursued, including all puerperal causes together as those of childbirth. The mortality from this cause occurs between the ages of 15 and 55 years. In England and Wales, on the average of the 30 years 1861-90, it shows a small death-rate below the age of 20; one of 0·6 per 1000 women living, from 20 to 24; nearly one per 1000 in the two next decades, and a very small rate above the age of 45 years (*see* Table I.).

A more useful comparison is made by taking the number of deaths in proportion to the number of women bearing children in the year, or, what is nearly the same thing, the ratio of deaths of mothers in childbearing to births. For the 30 years this was 4·72 deaths to 1000 births, or one death in 212 births.*

These rates have varied but little during the 30 years. As, however, during the last decade, a system of enquiry has been in operation, by means of which a large number of deaths which had been indefinitely certified were added to the class of deaths from

* *Supplement to 55th Annual Report of the Registrar-General.* p. xxviii. Dr. Farr estimated the death-rate of lying-in women as 5·3 per 1000 child-bearings. *17th Annual Report, Appendix*, p. 73.

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childbirth, the mortality is in reality less than in former decades, when no such addition had been made. A paper by Dr. Boxall* five years ago showed that the mortality from puerperal fever and childbirth had not declined in the country at large, but in London there was a steady decrease, especially in the deaths from the accidents of parturition. The evidence so far shows that in the general population the average risk to the mother of death in childbirth is about one in 200. It is said that the Hebrew women die in larger numbers than others.†

How is the risk affected by the number of the labour? Here the Registrar-General cannot help us. Dr. Matthews Duncan collected statistics from various sources, which agreed in showing that the risk of death at first labours is about double that at subsequent labours, the risk again increasing as the mother reaches her ninth and later labours.‡ Roughly speaking, it may be said that one mother dies in about 100 first labours.§

It is unnecessary here to do more than allude to the causes of this larger mortality; at the first labour untried physical conditions have to be tested, whilst subsequent childbearings come only to those who have safely passed through the ordeal, and have again become fertile; the process at first is longer and more difficult, and complications are more frequent. It is to be added to this that the majority of cases of illegitimate births are included in this class, and in these mental distress leads to a higher mortality.||

We next enquire how the risk of death at childbirth is affected by the age of the mother. Dr. Duncan's figures again show this with great clearness. Immature childbearing, before the age of 20, and late childbearing, are both attended with special risk, but greater risk attaches to elderliness than to youth. "The age of least mortality is near 25 years, and on either side of this age mortality gradually increases with the diminution or increase of

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* *Lancet.* 1893. vol. II. p. 9.

† Stillman (New York). *Life Insurance Examiner.* 1888. p. 35.

‡ Matthews Duncan—"Fecundity, Fertility, Sterility." 1866. p. 246.

§ The statistics quoted by Duncan vary between one in 60 and one in 112. *Id.* p. 241.

|| *Id.* p. 233.

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age," but the greater safety is in the five years before 25. The safest age is also that of the greatest fecundity.*

The greater fatality of early and late births is shown, as we might expect, to a more marked extent in primiparæ than in multiparæ. Duncan gives two tables of the mortality of primiparæ at various ages, one by Hugenberger of St. Petersburg for puerperal fever only, and one from Edinburgh and Glasgow, for all puerperal causes. They deal with small numbers, 97 and 50 deaths only, in 2253 and 3722 primiparæ respectively, but so far as they go they agree in showing that the death-rate at first labours rapidly increases about the age of 30 years and thereafter. The Russian table indicates a mortality rising from three per cent. between the ages of 19 and 26, to 9·75 per cent. between 36 and 45. At the immature ages of 15 to 18 years it is also high—4·76 per cent.†

IV.—*The Mortality of Childbirth in Assured Female Lives.*

The mortality from childbirth experienced by assured females was shown by the 10 Scottish offices in 1872, and by the 30 American offices in 1881. The entire experience of the 20 British offices in 1869, as regards causes of death, has never, so far as I am aware, been published. It is much to be hoped that the mortality experience, which is now being tabulated by the Institute of Actuaries, will include statistics of the causes of death.

The 10 Scottish offices adopt the classification of causes of death of the Registrar-General for Scotland, which is not the same as that in use in England and Wales. Class IX. comprises the diseases of the organs of generation in females, and includes childbirth. Mr. Meikle gives a comparison between the deaths in this class among the female assurers and in the Scottish female population respectively. Out of every thousand deaths at the various ages amongst the women assured, there were attributed to this class at

* *Id.* p. 275.

† *Id.* pp. 263, 271, footnote. Whilst the above has been passing through the press, a paper by Mr. T. A. Coghlan, on "Deaths in Childbirth in New South Wales," has been read before the Royal Statistical Society (June 21st, 1898). A mortality is shown of 7 per 1000 (6·7 for the married, and 10·0 for the unmarried, who form 9·3 per cent. of the total mothers). Conclusions closely agreeing with Dr. Matthews Duncan's are arrived at, with regard to the higher mortality of first labours and the influence of the age of the mother. The total number of deaths, 813, in 115,669 births, affords a wider basis than any Dr. Duncan could command.

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ages 20 to 24, 80 deaths; at ages 25 to 34, 98; at ages 35 to 44, 108; and at ages 45 to 54, 32 deaths. The numbers in the population were 56, 81, 75, and 24, so that assured lives were more fatal from this cause by over 34 per cent.*

The excess is thus clearly proved, but the amount of that excess is not measured with any accuracy, because the *chiffre lethale*, the proportion of deaths from a given cause to the total number of deaths, is not an entirely satisfactory basis for comparison. The ratio borne by the number of deaths from a given cause to the population living at the specified age is the true basis of comparison.

The 30 American offices return 198 deaths from "Childbirth and Puerperal Diseases" out of 2182 female deaths from all causes. † They are distributed over three age periods. From 19½ to 29½ years this cause accounts for 1·93 deaths per 1000 women living at risk; at 29½ to 39½ for 1·36; and at 39½ to 49½ for 0·63 per 1000 (*see* Table II.). The different grouping of age periods renders exact comparison of these figures, with the death-rates already given for the general population of England and Wales, impossible. But it is substantially accurate to state that the excess of mortality from childbirth in assured (American) females over our own female population at large is equal to 150 per cent. between 20 and 30 years of age; 50 per cent. between 30 and 40; and nearly as much in the following decade of life.

It is thus evident that the class of female assurers is subject to a much larger mortality from childbirth than the females in the general population, and this notwithstanding the influence of selection, which ought to weed out the weaker ones. It is possible that the excess is to be in part explained by the existence in the past of a larger ratio of married to single women amongst the assured than among the population at large.

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* Meikle. *op. cit.* p. 47. I have re-grouped the age periods.

† There seems to be a discrepancy in the figures of Meech. He makes the 30 American offices to report in all 2058 deaths of females, whilst 27 of the 30 offices, which returned causes of deaths, report 2182 deaths of females. *Op. cit.* pp. 29, 52.

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V.—*Mortality as affected by Marriage.*

Some light is thrown upon the subject by a comparison of the mortality occurring amongst the married and unmarried members of the community.

This subject was investigated by Dr. James Stark,* who showed from the statistical returns for Scotland for the years 1861 and 1862, that the death-rate amongst the unmarried, both of men and of women, was considerably higher, at almost all ages, than that amongst the married portion of the community. The difference was much greater in men than in women. This curious fact, of the apparently greater healthfulness of the married state, evoked various explanations. It was averred that bachelorhood was a dangerous occupation, attended with a high mortality, but it was pointed out, on the other hand, that this was somewhat like saying that because lifeguardsmen were tall men, therefore the profession of a lifeguardsman promoted height of stature. The true explanation of the lesser mortality amongst the married is, no doubt, that of Mr. Herbert Spencer, who gives three causes: firstly, that men who marry have the stronger instincts and more vital energy; secondly, that the ability to earn means of support, enabling men to marry, implies stronger health; and thirdly, that female selection determines that the more attractive and healthier men should marry.†

Causes similar to the first and third of these have their influence also upon women, and it is doubtless to such influence that the lesser mortality of married females is due. But there are exceptions to this lesser mortality. Between the ages of 15 and 30, the death-rate among wives and widows is greater than that among spinsters; between 30 and 40, the deaths of spinsters are slightly in excess, and between 40 and 45, the balance is again just turned against the wives; after 45, the usual rule of lesser mortality for the married continues to the end of life.‡ I know of no cause which would produce these results except the mortality of child-

* "Remarks on the Influence of Marriage on the Death-Rates of Males and Females." Abridged in *Journ. Inst. Act.* XXII. 233.

† "Study of Sociology," quoted in *Journ. Inst. Act.* XXIII. 42.

‡ After the age of 75 the data are too few to make the returns of value.

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birth. Below the age of 30—and this will include about 13 out of every 15 first-labours *—it appears that the risk attending these first efforts at maternity carries the death-rate in excess of the rate for the unmarried. After the age of 30, the slight mortality from childbirth is not enough to turn the scale against the wives, but between 40 and 45, the risk attending late labours has more influence, and possibly, also, disorders attending the climacteric epoch may be more fatal among wives, so as to produce a slight rise in the married death-rate at this period.†

Upon the whole, the influence of marriage is favourable to the duration of life. In the words of Farr: "Marriage is a healthy estate. The single individual is more likely to be wrecked on his voyage than the lives joined together in matrimony." ‡

VI.—*The Comparative Immunity of Pregnancy.*

It is sometimes stated that during the period of gestation a woman's life enjoys a sort of immunity from fatal disease. I am not aware that any explanation of this immunity has been given, and its existence in more than a slight degree is no means proven. I am not acquainted with statistics on which conclusions can be drawn. Pregnancy is seldom mentioned upon a certificate of the cause of death, so that the returns of the Registrar-General will not help us.§ We know that the pregnant condition brings an increased liability to certain diseases, such as nephritis, severe dyspepsia, and mania, besides various pelvic disorders. Chorea, endocarditis, and gastric ulcer are also not uncommon, whilst nearly one half of the cases of that rare but fatal disease, acute yellow atrophy of the liver, occur in pregnant women. Most important is the relation of phthisis to pregnancy. This disease is

* 86·5 per cent. of Scottish first-births occur before the age of 30 years. *Journ. Inst. Act.* XXII. 141.

† The inclusion of widows may also contribute to the rise.

‡ "Vital Statistics." p. 440.

§ The Registrar-General has, indeed, sometimes given a table of deaths of women "who were returned as pregnant." These amounted in 1871 to 35, and in 1879 to 66. It is incredible that amongst 800,000 or more women who were pregnant in the year, such an extremely small number should have died. Surely the number was much greater, but the fact of pregnancy was not stated upon the certificate. Sieveking, in "The Medical Adviser in Life Assurance" (p. 74), seems nevertheless to credit the returns. *34th and 42nd Annual Reports of Reg.-Gen.*

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scarcely ever fatal during the course of pregnancy, but when delivery has taken place, the symptoms of phthisis become more urgent, and death may follow rapidly. The period of gestation is thus one of quiescence, but if phthisis be acquired during this period, it is apt, Dr. Pollock informs us, to be a bad form, of no long duration.* The special risks attaching to the exanthemata, when they occur to pregnant women, are well known; small-pox is most often fatal, and enteric and relapsing fevers generally cause abortion, with risk to the mother's life.

On the whole, it is probable that the actual death-rate of pregnancy is low, but that its influence upon the after duration of life, in those predisposed to tubercular and other disorders, is unfavourable.

VII.—*The Liability to Cancer in Women.*

The special liability of women to death from cancerous disease was so clearly defined by Dr. Payne in his paper before this Association last year † that I need do little more than repeat his conclusions.

Dr. Payne has shown that females die from cancer at a higher rate than males, that the liability begins earlier (by about 10 years), and that it lasts longer than in the male sex. In Table I. it will be noticed that already in the decade from age 35 to 45, the mortality is 0·77 per 1000 living, as against 0·25 for males, and that it rapidly rises during subsequent age periods, standing at 1·78 and 2·8, as compared with male rates of 0·75 and 1·7. Cancer of the breast seems to be most fatal between the ages of 45 and 55.

Heredity appears to have greater influence in this disease in the female sex than in the male, especially when there is a history of one or more cases belonging to the same sex.

Assurance statistics generally confirm these facts. In the returns of the ten Scottish offices, cancer is unfortunately included with gout and some other diseases, but the mortality from the class so formed differs greatly in the two sexes. In men the deaths bear

* Dr. J. E. Pollock: "The Prognosis of Consumption," p. 64. Fagge's "Medicine," I., p. 1090.

† "Transactions of the Life Assurance Medical Officers' Association," May 5th, 1897.

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much the same proportion to the total deaths as in the male population of Scotland. In women the proportion, already much larger than in men, is continually exceeded by the assured lives.*

The American offices' returns show an average death-rate from cancer amongst women, of 0·27 per 1000, being 50 per cent. higher than that for men, which is 0·18.† The excess falls upon the ages from 40 to 60, confirming the statement of the earlier occurrence of the disease in women. The rates are, however, low throughout, and it is probable that many cases of cancer are included under headings relating to special organs, and in particular under "diseases of the breast and uterus," which shows a large mortality.

VIII.—*The Selection of Female Lives.*

(*a*) By motive of Insurance.

The total number of female lives assured is small compared with that of males. Men of the middle and upper ranks of life insure their lives almost as a matter of course, so that offices have to deal with a class not very different from that of the community at large. But only one woman insures out of many; and the offices have to deal with a small fraction only of the female population, who are thus selected for assurance. How is this selection made, and what class of women are they who insure?

It would appear that the large majority of female assured lives in the earlier part of this century were married women,‡ and the assurance was very commonly effected on account of property; for example, in female lives on which leases had been drawn, or on which life interests depended. Although this is a very legitimate class of business, there is an obvious motive for insuring such lives when they are weak. Married women are not commonly insured, excepting when property interests are concerned; we should therefore seek the more carefully for a motive in the comparatively few cases which come, especially as there is reason to believe that a

* Meikle, *op. cit.* p. 47.

† Meech, *op. cit.* pp. 194, 195. An apparent large excess amongst females at advanced ages is shown, but the data here are too scanty.

‡ See below.

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knowledge of some inherent weakness in the life has operated in a good many cases. Sometimes such a motive is almost unconscious on the part of the assurer.

With the growth of Life Assurance in popular favour during the last few generations, and the fuller participation by women in the responsible work of the community, a much larger number of unmarried female lives have been taken upon the books of the Assurance Societies. Thus, at the United Kingdom Office, for which I act, I find that out of about 3230 policies, issued during the period of 15 months, from October, 1896, to December, 1897, 200 were on the lives of women; 19 of these were widows, 70 were wives, and 111, more than half the total, were not married. The average ages at entrance were as follows:—widows, 46·1 years; wives, 38·1 years; and spinsters, 27·5 years. The occupations were stated in 50 cases, and included 22 teachers, 11 shop assistants, &c., five domestic servants, besides two sanitary inspectors, two confectioners, nurse, grocer, typist, &c.* 159 out of the 200 were endowment policies, and these accounted for nearly all the unmarried lives.

With regard to widows, these form a class of lives with some special features. If the husband's death is recent, and especially if the cause was consumption, the life is a doubtful risk. Unfortunately, proposal forms are not usually so worded as to give this information. The grief and anxiety attending widowhood lead, in some cases, to prolonged mental and physical depression. Widow's mania† is a recognised form of disease, and we are familiar with various forms of bodily ill-health which are common in early widowhood. On the other hand, many widows, persons of stronger fibre in mind and body, are roused by their loss to exertion, and take up the responsibilities of life in a brave spirit; these are often good lives for insurance. And many widows who insure belong to this class, for it is the able woman, who takes the place of her husband in business, who wants to provide for her children in case of

* Of 1490 life examinations of which I have myself kept notes, only 60 were of women. Of these, four were widows, 20 were married, and 35 were spinsters.

† Dr. Savage. *Transactions of the Hunterian Society.* 1897-8. p. 32.

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her own untimely death. Other struggling and less fortunate widows insure to cover loans.

The class of unmarried women who insure their lives is, I think, generally a good one. They are usually workers, earning an income, and this of itself is in favour of their long life, if the occupation is not an unhealthy one. Many of them take endowment policies, payable at the age of 50 or 60, being influenced by the motive of investment and provision for old age, which tends to a good selection of lives.

A certain number of young girls are insured by their parents, as is the case with boys. I am not fond of these juvenile cases. When the epoch of puberty is still recent, or has not even yet arrived, it is difficult to appraise a life, to judge how it is likely to bear the strain of adult development, and to weather the chief risk of that period, the onset of phthisis. And as few boys and girls are insured, the motive would point to a selection of those of more weakly constitution.

(*b*) By medical examination.

It is well known that the mortality of assured lives during the few years immediately succeeding entrance is low, so that it is commonly said that the effects of the selection due to medical examination pass off in four or five years, when lives become subject to the more average rate of mortality.

The effects of this selection upon the mortality from different causes of death vary a good deal. Thus, zymotic diseases (specific fevers) are hardly affected by the selection; and tubercular diseases show a low death-rate for two years only. On the other hand, there is much protection from diseases of the blood-vessels and of the nervous system, the mortality from these causes not reaching its average until seven years have passed. So, in a lesser degree, with diseases of the lungs, liver and stomach, and kidneys.

From death due to childbirth there is practically no selective protection in the early years of assurance. According to the returns of the ten Scottish offices, which are based, however, upon only 1301 deaths of females, the mortality from this cause in the

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first year after assurance is about one half the average mortality shown from this cause, and in the second year nearly twice the average, subsequently declining.

The American returns are still worse, for a mortality 25 per cent. above the average is recorded during the first year and a half, and then about the average rate is maintained for the ensuing eight years. No less than 81 out of the total of 197 deaths from child-birth occurred in the first 18 months after insurance. Doubtless most of these early deaths were due to the special risk of a first confinement, and one is impelled to believe that the real object of many of the policies was to cover this risk.

The medical examination of females is generally less thorough than that of males, on grounds of delicacy. The questions, too, are less searching, and in some cases the replies are less reliable. Often the urine is not obtained for analysis. Hence the medical selection of female cases is less protective to the office.

IX.—*The Practice of Insurance Offices in dealing with Female Lives.*

At the institution, in 1762, of the Equitable Society, it was decided to make an extra charge upon the lives of all females under 50 years of age (5s. to 7s. extra premium). In 1829, Mr. John Finlaison, the Government Actuary, made his "Report of Life Annuities," in which, on the experience of many annuitants or subscribers to Government loans,* he laid down that at every period of life between 12 and 85 years, females have a decided advantage over males, and that married women were better lives than single women. This rather special experience of annuitants ruled for a long time the practice of the offices, and in consequence of these and of similar statistics, some assurance companies offered a lower scale of premium rates for female lives than for males. But in 1843, when the Committee of Actuaries published the mortality of

* The Dutch utilised their knowledge of female longevity by nominating girls in large numbers as British Exchequer Life Annuitants in 1746. Cornelius Walford: "On Female, as Contrasted with Male Lives." *Journal of Institute of Actuaries.* XIX. 174 seqq. For reference to this comprehensive paper, and for other valuable references, I have to thank Mr. R. M. Moore, F.I.A., Assistant Actuary to the United Kingdom Provident Institution.

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seventeen British assurance offices, it was found that the deaths of females had been much in excess of the computed deaths, and that the average duration of female life under the age of 36 years was less than that of males. This unexpected result led to an abandonment of the lower scale of premiums for women, and to a more strict medical selection of their lives.* Dr. Farr's English Life Table No. I., published in the same year, gave the expectation of life of women as only slightly exceeding that of men.† At that time the female assured lives were said to be about one in seven of the total number assured,‡ and nearly all of them were in the married state.§ The Institute of Actuaries' Experience Table No. 2, taken from the returns of 20 companies and published in 1869, showed again a high mortality under the age of 50 years, but the excess was not so great as in the former returns. It was clear that female assured life belonged to an exceptional class.

In 1870 the New York Life Office decided to charge one per cent. extra rate on all policies on the lives of women.‖

After this time many other offices came to a like decision, although the rate was usually less heavy. The associated Scottish offices recommended to their directors in 1875 that an additional charge of 5s. per cent. per annum should be made on all female lives under the age of 50, to be discontinued when the assured had attained that age.¶ Most of the northern offices adhere to this practice, but there is much variety in the English companies. The United Kingdom, the National Provident, the Law Union and Crown, the British Empire, the Economic, the Imperial, and the Royal Exchange, follow the Scottish lead; the Colonial Mutual Office adds three years to the life. The Prudential and the Sun charge the 5s. extra throughout life, as do the Caledonian and the Pelican. The North British and Mercantile charges a

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* Walford. *Ibid.* p. 184.

† *Fifth Annual Report of Reg.-Gen.*

‡ Mr. C. Ansell. *Journ. Inst. Act.* XIX. 186.

§ Mr. J. Mann. *Id.* p. 197. Mr. A. H. Bailey. *Id.* p. 204. The "married or widows" numbered 165 out of 173 deaths of females in the Scottish Equitable Office, from 1831 to 1864. *Id.* p. 198.

‖ *Id.* p. 199.

¶ *Id.* p. 209.

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single extra of 10s. per cent. A large number of offices content themselves with single extras of 15s. (in case of the Star) to 20s., applicable only if newly married, or if pregnant, or if pregnant for the first time. Amongst these are the Gresham, Standard, Royal, Norwich Union, Union, Equity and Law, Law Life, London and Lancashire, &c. Some large offices, such as the Clerical Medical and General, and the Legal and General, still make no extra charge for females, as is the case also with the Refuge, the Eagle, the Friends' Provident, and other smaller companies. The huge American offices, Mutual of New York, and New York Life, make no extra charge.*

X.—*Conclusion, and suggested Rules for the Estimation of Female Lives.*

We have seen that the life of woman is a better one than that of man at the beginning and end of the course of life, but that during the middle period, which is the most important for insurance purposes, it is hardly so good. We saw that childbirth and the earlier incidence of phthisis were the chief factors in this increased risk, and that cancer is to be thought of at ages when the risk of consumption is growing less.

Assured females we found to be a special class, whose selection, both as regards motive for insurance and as regards medical examination, is apt to be less favourable to their longevity than in the case of assured males; and their mortality is in consequence considerably higher.

The following rules for guidance are submitted:—

1.—An extra annual premium rate to be charged on all policies in force on female lives up to the age of 50 years, when it is to be discontinued. Most of the Scottish and many English offices charge 5s. per cent.

2.—The insurance of women to be encouraged, but agents should be instructed to supply full information as to the motive for insurance in all such cases. In this way existing conditions adverse to the life would be better known.

3.—The medical examination should be thorough, and on this

* "Life Assurance Agent's *Vade Mecum.*" 1897-8. By James Wilkie. pp. 40, 41.

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account it is better for a lady friend to accompany the applicant. The urine to be examined if practicable, and certainly in all cases of doubtful nature.

4.—When a married woman applies during the childbearing period of life, the following rules to be followed:—

(*a*) If she has had one or more children, without difficult labours, she may be accepted.

(*b*) If labours have been difficult, accept at an advanced premium at discretion.*

(*c*) If she has had no children and is within three years of her marriage,† and is in good health, charge a single extra (10s. to £1) to meet the risk of a first confinement. If under 20 or over 30 years of age, postpone the insurance, as first confinements outside these limits are too risky. ‡

(*d*) If she is pregnant, defer until the pregnancy is ended. In exceptional cases accept with a single extra (£1).

5.—Widows are not as a rule desirable lives in early widowhood (one to two years). If the husband died of consumption, delay and a substantial advance are imperative. Scrutinise the effect of the widowhood upon the mental and bodily health. Many widows are, nevertheless, good lives.

6.—Unmarried women, if well occupied, are often good lives, especially for endowment policies.

7.—In order to obtain the needful information, the following question is submitted for inclusion in the proposal form:—"[For married women.] How long have you been married? Have you had children, and, if so, have any labours been difficult? If

* Stillman would postpone all such cases, or reject them, as well as those of rapid childbearing. *Op. cit.* p. 186.

† "The question of a woman's being probably sterile is decided in three years of married life. . . . Only seven per cent. of the fertile bear first children after three years of marriage."—Matthews Duncan, *op. cit.* p. 194.

‡ The risk of a first pregnancy is a very common and important one. Three country proposals came before me in one day recently for young wives, aged 25, 25, and 30 years respectively, "without children." If these women were recently married, the risk was materially enhanced by the chance of a first confinement. But the forms are seldom so drawn as to give evidence of the facts without special enquiry. I once examined a lady aged 33 years, married for one year, no children; apparently in sound health; urine not obtained. She was taken clear. Four months later she died of eclampsia and premature labour. I examined another woman aged 39, married a few weeks only; and advised postponement or a large cautionary extra.

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widowed, please give the date and cause of death of your late husband."

8.—Applicants who are in or near the climacteric decade (40 to 50) to be examined with special care in case of tendency to nervous or organic failure, which would require postponement, or advanced rates.

9.—Young girls not yet mature to be accepted with caution, partly on account of the early occurrence of phthisis in women. Endowment policies, payable at 40 or 45, are preferable for these young lives. A family history of phthisis (especially in the same sex) has much weight in women under 35 years; after that age it has somewhat less weight than in men.

10.—On account of the greater liability of women to cancer and its earlier occurrence (by 10 years) than in men, a history of cancer in parents is of more importance. The death of the mother by cancer always requires an advanced premium, and the death of both parents is almost prohibitive.

11.—With regard to the special disorders of women,—repeated abortions will suggest syphilis; dysmenorrhœa raises the suspicion of serious pelvic or abdominal trouble; old ovarian and uterine disorder should be well cured, but prolapsus uteri is of little moment to the life risk; a capital operation requires a delay of one or two years.

12.—Hernia in a woman always requires an advance; if umbilical, rejection of the life.

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Discussion.

The Chairman: You will agree with me that we owe many thanks to Dr. Hingston Fox for his careful paper; and we shall be glad to hear the remarks of members. The conclusions and recommendations which the author of the paper has made are so important that it would have been desirable, I think, to have had them beforehand, in order to have been able to consider them.

Dr. Glover Lyon: I should like, Sir, to express my agreement with you on the points you have just mentioned. I think it is quite impossible in the case of a subject like the present one to have a really good discussion unless the paper be in our hands before it is read. This was the custom in the Association for some time. I am aware that it is very difficult to get the reader of a paper to prepare it in time for this to be done; and it was for that reason during the time I was Secretary this mode of procedure fell out of use.

Dr. Hingston Fox mentioned the dangers of puberty. I should like to know what they are; I did not know that there were any particular dangers of puberty.

There is a point of particular importance in the present matter. Women who come to insure their lives are quite out of the ordinary; they cannot in any way be compared in point of motives to the general body of men. First of all they mostly come for loans. There seems to me also to be a very great *prima facie* difference between those who come to borrow on a reversion and those who come to borrow on a life interest. If a man has a reversion, he has got something to look forward to; he is going to borrow money and pay it back, and possibly he will be able to live very decently afterwards. But those who borrow on a life interest are overstepping their income with no prospect of their affairs improving. They are bad lives in the very inception. To compare these female lives to ordinary male lives is hardly a good comparison. It would be fairer to compare men and women borrowing on life interest and reversion each with each.

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The reference to consumption interested me. I understood Dr. Fox to say that selection in these cases only affected the mortality during the two years following insurance.

Dr. Hingston Fox: What I said was that selection protects from phthisis for two years only.

Dr. Glover Lyon: Where did you get the figures from?

Dr. Hingston Fox: From the returns of the Scottish and American offices.

Dr. Glover Lyon: I think the American figures would be too new. As regards the Scottish, I went through those figures five or six years ago and found a great difference at all ages of insured lives who died from consumption compared with the Registrar-General's returns.

Again, with regard to the experience of American offices up to 1874, I think most of the figures must be very new; because I was speaking to our actuary, Mr. Marks, the other day on the question, and he said they had come to the conclusion in England that female lives were bad up to 54, but were better after 54; the improvement after 54 pretty well making up for the defect in the lives before 54. For that reason his office made no difference between male and female lives. It is evident that such a compensation at the end of life could not be shown if the bulk of the business were new.

Another point I want to bring up is in reference to lady examiners. My mind is quite open on the matter, but there is no question about females deceiving examiners far more than men do. This is very well known to the actuaries of the companies. It seems to me that women are far better able to find women out; and then certain other difficulties would vanish, such as those attendant upon the examination of the urine. If the examiner be a lady there can be no delicacy on this point. I have spoken to one or two of the ladies whom I have examined, and most of them were more or less indifferent. One of them said, "I should not like to be pulled about by a woman."

Dr. de Havilland Hall: I would like to join in cordially thanking Dr. Hingston Fox for his valuable paper. His previous

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paper was so interesting that I came to-night with high expectations; and I am not disappointed. He has gone into the question so thoroughly that the paper does not offer much opening for criticism. We shall have to think out the facts and figures contained in it before we can criticise them.

I quite agree with him that one very important factor in female lives being worse than male lives is the less thorough examination we can give the female candidate. Perhaps we can all admit that we have examined female lives with less thoroughness than we do male lives. We cannot very well ask the lady to strip herself in the same way as we can ask a man. If a woman patient comes up for advice she knows it is for her benefit that a thorough examination should be made; but people who come for life assurance want as little examination as possible. Women trade upon this fact, and will often make a difficulty about an examination, and in such circumstances most of us do not insist upon so thorough an examination as might perhaps be necessary. One cannot make a proper examination of the pelvic organs sufficient to satisfy oneself as to their exact condition, and as to whether they are subject to disease.

The question of the examination of urine is another difficulty, and I quite believe that sometimes women pass off other specimens of urine for their own.

It is the experience of my office that nominee policies are not so good as policies of people who assure their own lives. The bulk of the female risks I have had before me have been nominee policies. I think that is an important point. If a person comes and insures, and takes out a policy on his own life, I am disposed to look upon that as a better risk than a nominee policy.

As regards the practice of my own office, hitherto we have imposed no extra for female lives except in certain cases for first pregnancies. I cannot say that this has been universally done, but as a rule an extra has been charged for first pregnancies.

The question of examination by ladies in the case of female lives has arisen in my office. We have appointed a certain number of lady doctors to examine for us in London and the provinces, so that ladies have the option of being examined by them. I think

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that is desirable, in view of the fact that there will be a still greater increase in women who insure. Hitherto, however, there has been no strong expression of feeling on the part of women who come to be insured.

Dr. Theodore Williams: This is a paper which we must all lay to heart. I confess I do not see anything in it to criticise. There are many conclusions at the end of it which I should like to think over; for I cannot quite make up my mind on them yet. I think I quite agree with the paper in general; it is very much the same as my own experience. Dr. Fox has gone on a very wide basis, and gathered together most valuable facts. One question he alluded to, was the age at which phthisis attacks female lives. That is a very serious question indeed, and I think I was one of the early ones to point out, in the first edition of the joint work by my father and myself on pulmonary consumption, published in 1871, how it does interfere with females more than males. In the first place, the age at which they are attacked is earlier than in males, and if there is any family predisposition, whether it be on the father's or the mother's side, the onset of the consumption will be precipitated by something like seven years. In our cases females were attacked by phthisis at about 28 years of age, but where family predisposition could be traced it was more like 21. On the other hand, males free from family predisposition are attacked at an average age of 30; those with family predisposition at 27. I am very glad to see that Dr. Hingston Fox's statistics point to the same condition.

Then as to the comparative value of married and unmarried lives. I was under the impression that if there was one life which was exceedingly good it was what my vicar calls "an unappropriated blessing":—the old maid who had a nice tom-cat and a lap dog or two, took her tea regularly, and lived a quiet life. In my experience there are more nonagenarians among old maids than among married women. However, Dr. Hingston Fox's statistics show that the opposite is true. And most of us used to think that the old bachelor was a sad dog, and a bad life, and that there was not much help

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for him—he was sure to die of neglect or drink, or something of the sort, while the married man, who had the cares of a family, but with a wife to take care of him, was likely to live for ever.

Dr. C. Y. Biss: I cannot refrain from thanking Dr. Hingston Fox for his able paper, and the useful work he has put into it. I would like to ask him first whether, now-a-days, it is not the general feeling, speaking broadly, that female lives are not so much inferior to male lives as used to be thought; and whether offices do not show a tendency to accept them without addition. In the second place, I would like to ask whether a comparison of American statistics with English ones, in this respect, is quite to the point. I do not profess to have any special knowledge of the subject, but the characteristic features of the races are very different, and perhaps English women differ from American women even more than English men from American men. I should like to know if Dr. Fox agrees with this; and, if so, how far it may affect his conclusions.

Dr. Hector Mackenzie: The first question which arises in my mind after hearing Dr. Hingston Fox's excellent paper, is whether there is anything peculiar to the insuring woman, in which she differs from the ordinary every-day female. Dr. Hingston Fox has pointed out that the general mortality of females at the assurance period of life is slightly below that of males. On the other hand, the experience of life assurance offices and medical officers is that the mortality among assured females is higher than that among assured males, and most offices are in the habit of charging higher rates for female lives than for male. What, then, are the factors on which this excessive mortality depends? The first, which has been alluded to by Dr. Lyon as well as by Dr. Fox, and is, I think, the most important, is that there is to some extent a natural selection against the office. Probably a larger proportion of the women who become assurers are borrowing money, than is the case with male assurers. Here, perhaps, we touch on a subject which concerns the actuary more than it does us. My impression is that, whether male or

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female, borrowers as a class are not quite average lives, and actuaries might be able to supply some useful information as to the mortality amongst this class. The purpose for which an assurance is being effected is not, however, usually put before the medical officer when he makes his report, and if it were it would not influence his decision. Another factor to which Dr. Glover Lyon has called attention is the difficulty of getting as reliable a history from women as we do from men. I should not like to imply that assuring women are naturally not so truthful as assuring men; but whether it is that they do not fully appreciate the importance of accurately supplying facts which are to be the basis of a contract, or whether it is that details as to personal history temporarily escape their memory through the ordeal of appearing before us, we certainly do not ordinarily get a history on which we can place as much reliance as we can in the case of men. Therefore, in such cases as are at all doubtful, we should always have a search made for the causes of death among near relations, and in cases where doubt still remains let the office have the benefit of the doubt.

Then there is the question of childbirth. I think that at present the offices guard themselves very materially against the risks of childbirth. If the mortality of female lives has been greater than the expectation, I do not think childbirth has entered very largely into the matter.

Dr. de Havilland Hall has referred to the difficulties of making a thorough examination in the case of female lives. Now, if we are right in thinking that there is a certain selection against the company, we should make it a rule that the examination of a female life should be particularly thorough. Everyone naturally is anxious to have as little examination as possible, but it is the duty of the medical examiner to satisfy himself as to the soundness of the applicant, and I think with a little tact we can generally succeed in this purpose.

The conclusions I should draw from the paper are that female lives are not intrinsically worse than males, but for some reason, such as has been mentioned, a class of lives which are more than usually risky present themselves for assurance. That accordingly

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special care should be taken to obtain full information as to the personal and family history, and that the medical examination should be at least as complete as is made in the case of male lives. I think if these simple rules were carried out the necessity for a uniform extra rating would disappear.

Dr. Hingston Fox, in reply, said: I must apologise, Sir, for not having had the conclusions of this paper printed previously to the meeting, and must cordially thank the members for their kind hearing.

With regard to the dangers of puberty apart from immediate risk to life, I referred to chorea and other nervous troubles, and possibly the commencement of phthisis.

Dr. Glover Lyon and Dr. Mackenzie spoke about insurance to cover loans. No doubt our experience differs, but the women I have met with, insuring from this motive, have been few. It would be very advisable to have this motive brought before us, and more clearly defined when it is present, as it makes rather against the value of the life than in its favour.

Dr. Glover Lyon also spoke as to the value of the American offices' statistics. Thirty offices reported, and down to 1874 over one million lives and 46,000 deaths are recorded.

Dr. Glover Lyon: I meant that in American offices the proportion of new business would be large compared with the old.

Dr. Hingston Fox: Then with regard to Dr. Biss's remarks as to the special conditions which might influence the mortality of American women, I may say that the statistics in their chief features have a general agreement with those of the 10 Scottish offices. I am only sorry that our English authorities have not taken as much pains as the American and Scottish offices in tabulating the causes of death.

Dr. Glover Lyon spoke of the improvement in female mortality after 54, which made up for the excess before 54. I doubt whether that is really the case, because I am told that many of these policies on women's lives are allowed to lapse or are sur-

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rendered after the period of middle life is over, having been taken out to meet a risk for a comparatively limited time.

I am glad that Dr. Williams is able, with his special experience, to confirm the point I brought forward with regard to the earlier occurrence of phthisis in women.

With regard to married as against unmarried, the married women in the population are, no doubt, better lives than the unmarried women, if you take them in the mass. Among the unmarried are necessarily included deformed, delicate, and unattractive females. But when you consider those who come to insure their lives, probably the unmarried class are better than the married, because, as I believe, the unmarried have generally a better motive for insurance than the married.

As bearing upon Dr. Biss's question on the present tendency of offices to accept female lives more readily, I may note that there was a report not long ago from the actuary of the Scottish Equitable office, in which, from the experience of that office, he showed that half of the extra charged by the associated Scottish companies, or more exactly 2s. 10d. out of the 5s., would have been sufficient to meet the loss due to the extra mortality. Many offices are content to make special charges to meet the risks of childbirth and pregnancy; accepting female lives otherwise on ordinary terms.

My own view, after looking at the evidence of the mortality, both in the general population and especially in insured lives, is that we ought to put on an extra charge up to the age of 50 years.

Some of the speakers have reflected upon the unreliability of our female candidates. But the men are far from being models of candour. The greater difficulty we often have with women in obtaining full information is due to a natural nervousness and excitability on their part in coming before a medical examiner.

I must acknowledge my indebtedness to my brother, H. Courtenay Fox, for help in preparing the diagram.

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SOME EXTRA RATINGS OF HEALTHY LIVES,

By **G. A. HERON**, M.D., D.P.H., F.R.C.P.,

Physician to the City of London Hospital for Diseases of the Chest, and to the Mutual Life Association of Australasia.

Read before the Life Assurance Medical Officers' Association, November 2nd, 1898.

Dr. HERMANN WEBER, *President, in the Chair.*

SUMMARY.

"Healthy Lives" defined.

Some habits that influence the rating of seemingly healthy lives—e.g., abuse of alcohol, opium, chloral, tobacco. The last unimportant; the others make life assurance impossible.

Neglect of vaccination should now be met with extra rating.

Seafaring risks.—Officers of the Mercantile Marine not, as a class, long-lived men. Accidental death not common among these officers.

Naval and military risks.—The old method of assuring the lives of officers of the sister services a bad one. Assurance must be more costly for the British officer than for officers serving other European powers. The "Gresham Rates." Probably these are now too favourable to officers.

Tropical residence; different ratings for this.

Risk of obesity.—Importance of hereditary tendency in this connexion. Impossible to clearly define the beginning of stoutness that is unhealthy. How this difficulty may meanwhile be met. Different types of stout men who seem healthy. Suggestions for their rating. Hereditary tendency to obesity should decide system of rating.

Family history bearing on extra rating of healthy lives.

Family history bearing on insanity.

General paralysis not hereditary. Its bearing on extra rating of healthy lives.

Other types of insanity; extra rating in them for healthy lives.

Family history of tuberculosis. Its bearing on extra rating.

Possible fallacies in systems of rating healthy lives with family history of tuberculosis.

Conditions on which it is suggested healthy lives should be accepted at ordinary rates, even with family history of tuberculosis.

Cases illustrating fallacies in present estimates of risk from family history of tuberculosis. A very few statistics bearing on the rating of this risk in healthy lives.

Gout and cancer, having recently been discussed by the Society, are now merely mentioned.

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SOME EXTRA RATINGS OF HEALTHY LIVES,

BY

G. A. HERON, M.D.

The members of this Society clearly understand what is meant by extra rating. We also clearly understand, but each one of us from his own point of view, what is meant by healthy lives. We hear of proposers for life assurance who have been accepted at ordinary rates by one office, within a few days of their having been subjected to extra rating, or even declined, by another office. I refer to London offices of good standing, and to cases in which the facts before both the offices were identical, when they arrived at different decisions respecting the same proposer. It is, therefore, certain the members of this Society do not all mean exactly the same thing when they speak of healthy lives. For the purposes of this paper, and of the instructive debate which I hope will follow upon the reading of it, I venture to offer a definition of these words. To ensure our unanimous acceptance of this definition, I put it to you individually in this form:—Healthy lives are those you would yourself advise your office to accept as first class risks. I apprehend there will be no dissent from this definition!

Members of this Society are, therefore, up to a certain point, agreed as to what should be regarded as a healthy life. The person so classed must be of sound body.

Next comes the question of his habits. Immediately differences of opinion arise; although these differences would not, I think, find much, if any, support here.

Alcohol.

A proposer whose use of alcohol was moderate for him, would undergo no extra rating at our hands upon that score. It is, however, not impossible there might be found among us, some difference of opinion as to what moderation in this connexion means. When the medical adviser of an assurance company decides this question

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of moderation in matters alcoholic, he takes, I think, experiences of this kind he has had in his own person, and roughly sums up the habits of the proposer from this point of view. I do not claim a high degree of perfection for this test; but, on the whole, it seems to me a tolerably sound one. To attempt to classify as moderate or excessive, a man's consumption of alcohol by putting down in figures the amount of it he says he consumes in the day, is, in my judgment, a very untrustworthy way of getting at the facts. Men who drink to excess seldom know, and rarely want to tell, how much they drink.

I know of no means by which men beginning to give way to alcoholic excess can, with certainty, be detected by the medical adviser of an assurance office, who for the first time sees the proposer when he presents himself for examination. The shaking hand, the tremulous tongue, the story of morning nausea, and such like symptoms, are not always found in men guilty of alcoholic excess when they present themselves for life assurance. The chief reliable source of trustworthy information concerning cases where the alcoholic excess is not great, is the proposer's medical adviser. When we find the beginning of alcoholic excess, we should not, I think, consider the question of extra rating. In my opinion, these persons should be regarded as not assurable.

In like way would I deal with the opium eater, and the chloral drinker; and it will not, I think, be disputed that these two classes of persons might, in the beginning of their abuse of these drugs, be passed by any one of us as healthy lives.

Tobacco.

Tobacco, like other good things, is sometimes used in excess. It has happened to me to notice that the fauces and throats of certain otherwise healthy proposers were congested. Not seldom such persons, in answer to a direct question, have told me they knew they smoked too much tobacco. The ill effects due to excessive tobacco smoking are very transient; and I do not know of a well authenticated case in which permanent or material injury has been done to health by even, what might fairly be called,

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excessive smoking. Therefore, it has never occurred to me to recommend extra rating in such cases, though I believe this has been done.

Vaccination.

Within the last few months, a new and a very evil habit has, in this country, received the highest recognition and encouragement. I refer to that curiosity of unreason, which finds its most remarkable expression in the odd type of crank now well known as the Conscientious Objector, who will long be remembered as a boon conferred upon the nation, in the name of liberty, by one of the most powerful governments this country has yet had. Assurance offices should carefully keep in mind the fact, that in many parts of this country vaccination is now practically left undone among the working and lower middle classes. If the official recognition of the right to live unvaccinated remains for some years as it now is, the mortality from small-pox will increase among the adult population. Therefore, those assurance offices which do not now, or very soon, protect themselves against the increased risk of death to unvaccinated persons, which, sooner or later, will thus arise, will have to pay heavily for this neglect of their own interests. I do not know what extra rating should be enforced upon unvaccinated persons. It ought to be a heavy one; and the offices would do good service to themselves, and to the cause of the public health, were they to agree to the enforcing of one uniform and heavy extra rating for healthy proposers who remain unvaccinated. I hope this Society will to-night give upon this subject an expression of opinion unanimous, strong, and clear. Such an expression of opinion should carry much weight with it in influential quarters; and if our offices will consent to enforce a substantial extra rating upon the unvaccinated, many converts to belief in vaccination as a safeguard against small-pox will be made, and with surprising rapidity. Unfortunately, the Conscientious Objector himself cannot be submitted to extra rating. Usually he has been vaccinated, and so, as a rule, escapes the consequences of his own wrong-headedness.

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Here, too, it comes to pass, as is so often the case, that the sins of the fathers are visited upon the innocent children.

Seafaring Risks.

Judging from what has come under my own notice concerning officers of our Mercantile Marine, they are not, as a class, long lived men, even when they serve on board first-class ships. This fact, if fact it be, is not explained by deaths from those accidents to which a sailor's life seems specially exposed; because deaths due to accident are not so common as might be supposed among the officers of, for example, the greatest fleet of the Mercantile Marine, the Peninsular and Oriental SS. Co. I do not know the chief cause of the comparatively early death that is apt to happen to the officers, not of any particular line of ships, but of our Mercantile Marine in general, including those serving in first-class vessels. My own office covers a world-wide seafaring risk by an extra charge of 10s. per cent. per annum, but officers actually engaged, or about to engage, in notoriously unhealthy trades would not be accepted on any terms. To officers in the service of first-class lines specially advantageous terms are offered, as, I believe, is customary.

Naval and Military Risks.

I suppose few good offices now follow the old practice of accepting naval and military officers at ordinary rates, and when they are sent on war-service charging them a very heavy extra rating, so heavy that a large number of officers, rated in that way, have allowed their policies to lapse, rather than attempt to meet charges they could not afford to pay. Such a system of rating is, in my judgment, most unfair to the assured.

One of the chief incentives to life assurance on the continent of Europe is the fact, that every healthy man knows he may be called upon to face the risks of war. In our more fortunate country, unless a great national calamity should befall us, the risks of war will continue, probably for many years to come, to fall exclusively upon the men who select as their calling in life the profession

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of arms. Therefore, assurance against war risks of the officers of our navy and army, must be carried out on principles founded on the very special experience of these services. For the reasons just now indicated, life assurance must be somewhat more costly for the British officer than for the soldier of other European Powers. Without going into details, chiefly actuarial in their essentials, I propose to refer to what are known as the "Gresham" rates for war risks. The outcome of these calculations showed, that the climate and war risks of the officers of the sister services might be covered by an extra rate amounting yearly to 8s. 8d. per £100 assured on the life of an officer aged 30. An officer aged 45, who, the Gresham calculations proved, ran a less risk of death in action than a younger man, could cover his war risk by a yearly payment of 3s. 9d. per cent. I understand these Gresham war rates were adopted by that office about ten years ago. It seems to me, the perfecting of naval and military artillery, and of quick-firing guns, and magazine rifles, that has been making such progress during the last ten years, must have had a material effect in increasing the risk of death a man must now face in naval and military actions; and this increased mortality seems likely to fall chiefly upon naval officers. On all sides one hears of the tremendous results that must follow the meeting of two powerful European fleets, each having determined to do its best to destroy its enemy. In these days of proposals for universal disarmament, naval and military officers would do wisely to assure their lives on the present easy terms offered by many offices; for it is certain, should there come probability of war involving this country, our assurance offices will reconsider their terms touching war risks; and it is also certain many assurance companies would then decline to take new war risks at other than prohibitive rates.

Residence in the Tropics.

There are certain parts of the globe, residence in any one of which shuts the doors of almost every office of good standing against any policy holder or proposer.

Some offices charge for the first ten years of residence in India

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20s. per cent. per annum, and apply practically the same rating to all other tropical risks, excepting of course the barred places. One office charges 25s. per cent. per annum for the first five years the policy-holder resides within the tropics, and after that time the ordinary rates of assurance. This office has a considerable and a profitable experience of the results of tropical residence, and its charge of 25s. per cent. per annum for the five years is based upon the outcome of these results. This proves, in the opinion of the office, that when fatal consequences follow residence in the tropics, it is usually within the first five years that death occurs. The duties of a medical officer with regard to these risks, are made all the more difficult when he advises a company whose terms of assurance, for persons resident within the tropics, depart somewhat from the usual official routine, and go in the direction of more liberal treatment of policy-holders. For instance, my office places on policy-holders no restriction nor condition of any kind, no matter where they may go to live. Hitherto the office has certainly not lost money by these assurances.

Risk of Obesity.

Many stout people are healthy; but some stout people fall into obesity. Although I have searched for it, I have hitherto failed to find a good definition of the physical conditions which stamp a seemingly healthy man as too fat for health. There is, however, a well-known type of man of whom we may say, with much confidence, he will become unhealthily stout. Such men are, in early adult life, noticeable for their large, well developed bones and muscles. They are full of the joy of living, and keenly alive to pleasures of the senses. Their appetites are large, and their powers of digestion excellent. But when we examine a person of this type, and find him healthy, and, but for the facts that he is increasing in weight and is too heavy for his height and age, would pass him as a first-class life, we should then enquire, very carefully, about such a man's family history; for it is certain obesity "runs in families," as the phrase goes. It is also certain, persons of this type, with an

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hereditary tendency to obesity, are much less frequently cured of their fatness than are people like in build to them, but without a family history of obesity. Now these sufferers from too redundant fat have, for centuries, been recognised by medical authorities, and other observant people, as being peculiarly unfitted to resist onsets of acute diseases, as being apt to be short-lived, and as being liable to sudden death. They are likely to die of those degenerations of arteries, muscles, and internal organs, which we know are dangers threatening the life of the fat man. Men of this type, and with a family history of obesity, are prone to be too stout in infancy, and up to the time of puberty. If this additional fact can be elicited concerning a proposer of this kind, it ought to make us insist strongly upon an extra rating. But here, again, we have no reliable statistics to guide us in coming to a decision as to the amount of extra rating necessary. Therefore, each medical officer must do as he thinks right. For my own part, had I to deal with a proposer who seemed healthy, but was too heavy for his height and age, whose weight was increasing, who had been too stout between infancy and near to the time of puberty, and who had a family history of obesity, I should advise, for assurance purposes, an addition of 15 years to the seemingly healthy man's age, or the equivalent of this in the shape of an endowment policy.

Now as to the man who has no family history of obesity, and who in early boyhood was not too stout. He may look the very picture of redundant health, a big, powerful man, brimful of energy. The only flaw is, he is too heavy, and his weight is increasing. We know this flaw, in such a man, is the expression of a threatened departure from health; and it is, almost always, curable in those who have no family history of obesity, and who will submit themselves to necessary treatment in early adult life, when the first threatening of coming obesity usually shows itself. It does not seem fair this man should be rated on the same scale as the other type of stout man, just now mentioned. The former is clearly a much better life than the latter, and should, I think, have the offer of an endowment policy payable at the age of 60 years. For the reasons mentioned I venture to advise the use of the endowment

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plan, until we have a reliable statistical table for the regulation of extra ratings in these cases.

When women are threatened with obesity they should, I think, be rated as men are.

The too fat man who wishes to assure his life to the best advantage to himself, should select for his purpose an office of good standing which has stout men among its directors.

Family History.

Extra rating of healthy lives is most frequently associated with proposer's family history, in its record of disease in father, mother, sisters, and brothers. Some offices ask questions about uncles and aunts of those who propose to assure. I incline, however, to the belief that no office now acts upon records of the diseases of uncles or aunts, unless the diseases are associated with a similar record in proposer's father, or mother, or sisters, or brothers.

Insanity.

If we find our healthy life is one of a family in which insanity has appeared, are we, on this account, to submit him to extra rating? The correct answer to this question depends, I think, upon the type of insanity with which we have to deal, and upon the extent to which it has shown itself in the family history. If a death from general paralysis occurred in a family, it would be, in my opinion, unfair to submit a healthy member of that family to extra rating, unless it was his father who was the general paralytic. In that case, the question of extra rating would turn upon the date of the attack in the father: for if it was prior to the birth of our proposer, it would have to be taken into account, but if it was after proposer's birth, it should not, I think, be counted against him that his father was a general paralytic. I do not speak of a man's mother in connexion with general paralysis, because the disease is not common among women; but, of course, the same considerations would apply, with at least equal force, to the child of a woman who was a general paralytic. We know from official statistics that in this country insanity is not increasing, while general paralysis

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is increasing. This increase is taking place much more rapidly—at something like twice the rate—among the well-to-do classes of the community than among the poor. Therefore, we must be ready to advise our offices as to what should be done in connexion with this problem. If a seemingly healthy adult proposer is the offspring of a parent who had shown symptoms of general paralysis before proposer's birth, it may be right, on that ground alone, to place him under extra rating. But I think the extra rating, if enforced at all—and in my judgment it is unnecessary—should be a very light one; because if the offspring of a general paralytic is sound in body and of good physique in adult life, it is most likely he will escape the consequences of his parent's misfortune. But should such a man have, in his family history, an additional record of any form of ordinary insanity, then, I think, there should be extra rating, no matter how healthy proposer may seem to be. He cannot inherit general paralysis; but he may, because of the additional record just mentioned, inherit a tendency to nervous disease in some other shape, and the fact that he is the offspring of a general paralytic must then tell against him. It may be right to decline such a risk as this; but I advise its being accepted on an endowment policy at 55, and for these reasons:—It is very much more than an even chance in favour of an adult of good physique, and in good health, escaping the nervous diseases that seem to occasionally go with the story of insanity in a family. This we know from the fact that in such families it is only here and there, and in a small minority of cases, that the children who reach adult life in good health, and strong in physique, fall victims to serious nervous diseases, including ordinary types of insanity. Another reason for advising this endowment scheme is that, excluding general paralysis, the increase of insanity attains its maximum at ages over 55.

Now if we adopt this view of the extra rating of a healthy proposer, whose family history is disfigured by a case of general paralysis, it seems to me we, by so doing, indicate the course we should follow with regard to ordinary forms of insanity, associated with a family history of a healthy adult proposer. I believe offices would do a sound and remunerative business by acting upon this as

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a general rule:—For all healthy and strong adults, who have a pronounced family history of insanity, assurance may be affected on an endowment policy payable at 55. By a pronounced family history of insanity, I mean cases in which the father, or the mother, and also a brother or sister, had been, or were, certainly insane. We must keep in mind the view so strongly emphasized by the late Sir John Bucknill, that it is probable we often over-estimate the importance of heredity as a factor in the production and perpetuation of insanity. Bucknill supported this view by pointing to the fact, that the great majority of children of insane parentage do not themselves become insane. He also shewed how seldom it is we find insanity among the brothers or sisters, or even in the father or mother, of a lunatic who becomes a criminal.

Tuberculosis.

In relation to family history, there is no disease so frequently brought before us as tuberculosis.

On May 11th, 1882, Dr. Little, Dr. Benjamin Ward Richardson, Mr. Savory, and Mr. Wakley, presented to the British Life Association a report they had been requested by that office to draw up, on the subject of the "Company's Present Custom with Regard to Surcharges on Lives." This report deals with people in sound health, whose family histories record deaths from tuberculosis. The report advises the addition of ten years to the age of a proposer in his thirtieth year, should one of his parents have died of tuberculosis; in his thirty-fifth year he was to have seven years added to his age; above thirty-five he was to be taken at ordinary rates. A man under forty whose parents had both died of tuberculosis was to be declined; a proposer in his thirty-fifth year, was to have seven years added to his age if a quarter of the number of his brothers and sisters had died of tuberculosis; and if one half of them had died of that disease, he was to have ten years added to his thirty-five. The death of two-thirds of his brethren from this cause, was to ensure his rejection. If one parent, and a fourth of proposer's brothers and sisters had died of tuberculosis, double rates were to be charged; and he was to be declined if one of his

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parents, and more than a quarter of his brethren had been killed by that disease. These recommendations of the report I quote, fairly represent the requirements of assurance offices sixteen years ago; and we know similar terms are to-day offered to proposers who are in perfect health and of robust physique. I think any proposer who accepts these, or like terms, to-day, he being in sound health and of robust physique, will be exceedingly ill-advised, and will misuse his money; for it is certain there are in London offices in the first rank, willing to accept the class of proposer I have indicated on very much better terms than these. For my own part, I advocate the acceptance of such a life at ordinary rates, provided he is not living, and has no intention to live, in his infected home; and provided also his wife and children are presumably free from tuberculosis. My reasons for advising the acceptance of this class of proposer at ordinary rates are these:—When heavy ratings were fixed sixteen years ago, many things that ought to have been taken into account were disregarded; and chief among these was the fact, that tuberculosis can result only from an infection. It has practically escaped notice that the strongest arguments used to support the theory of family tendency to tuberculosis tell, with at least equal force, in favour of the view that infection is the cause of the incidence and spread of tuberculosis. The close, intimate circumstances of family life, the infection of the family home, and the total disregard of precautionary measures in the family life, because of ignorance—these facts, I venture to say, play a much larger part in the tragedy of family liability to tuberculosis than does hereditary tendency to that disease. But these facts of the family life have been altogether ignored in estimating the value of family tendency to tuberculosis in its bearing on life assurance. Hereditary tendency was thought to explain almost everything; and on this mistaken belief many estimates of an assurance risk are still worked out. You, Mr. President, told me, not long ago, of two striking instances of how family tendency to tuberculosis may be, as I would call it, manufactured. You told me, Sir, that the village of Gastura, in the island of Corfu, was free from phthisis until a rich man, who had consumption, came to reside there. He

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died, his clothes were given to the poor of the village, and phthisis then showed itself in Gastura. The other instance you mentioned, Sir, was this:—One of the new villas near the town of Corfu was inhabited by a family in which there was phthisis. Afterwards another family, until then free from phthisis, came to occupy the villa in question, and during residence there some of them became consumptive. Then came a third family, and it also was attacked by phthisis. In these instances, we have a good illustration of how many examples of so-called tendency to tuberculosis are altogether untrustworthy. Here we have a considerable number of people who, without family tendency to the disease, and with no more tendency to it than is common to all men, yet fall victims to tuberculosis, and so, in the eyes of the assurance world, where no discriminations of this kind are made, these people invest their children, and their grandchildren, and their own brothers, and sisters, and nephews, and nieces, with a family tendency to tuberculosis, an example of how it may happen that people are sometimes believed to give what they never possessed! Facts like these, ignored to-day in the practical working of many assurance transactions, strike at the foundation on which has been built the theory of hereditary tendency to tuberculosis. As evidence accumulates, these facts become more numerous, almost from week to week.

The weakling is submitted to extra rating because he, we are agreed, is more prone to fall a victim to disease than the robust man. We believe resistance to infection is more developed in the strong than in the weak. And if this is not true, modern physiology has gravely misled us. For these and some other reasons, I advocate the exemption from extra rating of the proposer who would be placed in the first class, were he not regarded as an inheritor of a special susceptibility to the infection of tuberculosis.

One of the outcomes of life assurance work is a craving in the worker for statistics. Therefore I must refer to statistics; although, as the making of them lies, I am glad to say, outside of the work of the medical adviser, my reference to them will be of the briefest. Dr. Sprague, of the Scottish Equitable Assurance Society, in referring to 1000 cases charged extra by his office because of

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consumption in their family history, stated, at the meeting of the British Medical Association in Edinburgh, that these people should have been charged an extra premium, but that the extra charged "was a great deal more than was necessary." This is a remarkable and suggestive admission for the manager of an assurance company to make; and its remarkableness and suggestiveness will not be less appreciated in England because it comes from the country of the people Englishmen are fond of decribing as "canny Scots." Dr. Sprague's detailed statement—which, I am told, will soon be published—will be an interesting study.

"The Value of Family History and Personal Condition in Estimating a Liability to Consumption," is the title of the best statistical statement I have seen, touching this important question. It was drawn up, in 1895, by Dr. Marsh, Medical Director of the Mutual Life Assurance Company of New York. 1994 cases with records of "consumption in the family," are dealt with in this report. The outcome of it, so far as concerns the subject of this paper, I give in the words of Dr. Marsh:—"In deciding upon the eligibility of an applicant for life assurance, in whose case there is a suspicion of future danger from consumption, his personal condition is of the first, and his family record of the second importance. Whenever he presents a robust physical appearance, with a weight at least equal to the standard or average as given in our tables, he may be accepted, notwithstanding any taint in the record of his family. In our experience such persons have a small liability to consumption, although not protected from it."

Gout and Cancer.

The two great subjects of gout and cancer have already been dealt with in this Society; and Dr. Payne's paper on cancer, will always be one of the ornaments of our "Proceedings." For my own part, I should follow in cases of family histories of cancer, the indications that would guide me in dealing with family histories of tuberculosis.

As for gout, I can but regard it as a very grave blot upon a proposer's family history, and should advise its being dealt with on

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lines of high extra rating. It is not until a man of gouty family has reached his thirtieth year and escaped, up to that time, all gouty symptoms, and is free from habits apt to lead to their onset, that I should advise his being accepted at ordinary rates.

The time limit, which ought to be enforced upon readers of papers before this Society, compels me to leave the rest of this large subject untouched.

Discussion.

The President: Gentlemen, we have heard the paper, and we cannot say that it wants in matter. It is very full in matter; I might almost say too full to be discussed. There is matter enough for three or four meetings, but, still, you will be ready to discuss one or two of the points in the paper, and we shall be glad to hear your remarks.

Dr. T. B. Crosby: After the very able and exhaustive paper, reasoned out, as it has been, by Dr. Heron, I agree with you, Sir, that it is too comprehensive a subject to deal with as completely as one would wish. There are one or two points I should like to allude to, and in which I cordially agree with him, and the first is the question of alcohol. Medical men are easily taken in by a man who is in the habit of taking too much—a man whom we should not accept if we knew what he did take—by his being prepared for the interview. A point which has guided me very considerably has been the time of day the man comes before you, and I have also been guided very much by the specific gravity of the urine. If the man is a water drinker he does not drink water to a sufficient extent to reduce the specific gravity; if he is an alcohol drinker he will probably have had some alcohol, which fact you cannot discover from his breath because you do not go sufficiently near to him; but you will find the urinometer will indicate a low specific gravity. A low specific gravity in the urine is a very important point.

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With respect to vaccination, I have adopted a principle for some years of this kind. A healthy subject comes before you unvaccinated from conscientious scruples of his parents. "Very well," I say, "we will give you the policy, but it shall be void in case you die of small-pox." He probably wants the policy because he is about to be married or wants to borrow money, or something of the kind, and the money-lender or the lawyer who is going to make out the marriage settlement sees that he is properly vaccinated. I can point to at least a dozen cases of that kind during the last two or three years, and I believe offices, if they adopted that principle, would get over the difficulty. I recommend you to follow that principle, and you will find that the gentlemen with these conscientious scruples will be readily over-ruled, and the office will be practically safe.

With respect to obesity, I agree with what my friend has said essentially, but I have also a little rule-of-thumb here, and it is this: that a man under fifty years of age should never have the girth at his navel greater than that of his empty chest. There is no reason at all—it is not the proper shape for a man. If he has a larger girth round his navel when he is under fifty years of age, I look upon it as referring to one or other of the three "ins"—indolence, indulgence, or intemperance—perhaps all three. I think that is a practical point which you will find of value if you will investigate the case still further. It has helped me immensely to further investigation. I do not allude to those cases of publicans and drunkards who come with poached-egg abdomens and narrow chest and that sort of thing, because we know perfectly well he is not likely to be accepted by any of us who are of acute observation. But I allude to the ordinary healthy man. I examined a gentleman the other day, 28 years of age, of perfectly healthy countenance, a wine merchant. He could not call and see Dr. Crosby, although his office was in Mark Lane and my office was only about 100 yards from it. And I said to the office who sent him to me, "I am there for so many hours in the day; why should not he call upon me as he goes to his office or leaves it?" I found he was a very big man, who said he rode 16 stone; he was 43 inches round his navel, and 43 inches round his empty chest. I put that

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gentleman up a little. It was an endowment policy, and I put him on seven years. He declined the policy, or his friends did for him. Some of you gentlemen, I daresay, will see him and see my original report.

With respect to the question of naval and military risk, I have often felt it a difficult matter. As for sea faring people being shorter lived, I suppose Dr. Heron has worked out the statistics, but I am mixed up with sea faring people, with captains and chief officers of the chief companies in London, and I see a great many old men who have been to sea all their lives, a great many men over 60 years of age, who have been to sea for 40 or 45 years, in perfectly good health. The only question which struck me about their being indifferent lives has been from their hardships and their temptation to do what we all recognise, namely, indulge in alcohol at times when they have nothing to do or when they are extremely pressed. With respect to the alcoholic habit my friend is perfectly right. I do not know anything that would induce me to accept a man who is beginning, and twelve months is enough. Any person who is guilty of excessive drinking—drinking between meals or excessive drinking in any way—has a bad life, worse than cancer and tubercle, and as I have said in this room and in this Society, the insidious affections produced by alcohol kill more men than all the hereditary diseases put together.

We have argued the question of syphilis here. Our friend, Mr. Jonathan Hutchinson, who is a very great authority, said he should only like to belong to a Syphilitic Life Assurance Society at ordinary rates. I agree with him there. I agree that if a man has undergone a certain amount of treatment for three or four years, and shows no signs, and shows himself to be in a good state of health, he is pretty safe.

Now I am coming back again to the general proportion which we may safely rely upon. Every gentleman in this room knows when a man is in a good state of health; if he is plump and round, and his pulse regular, and all his internal organs are healthy, it matters little what his family history may have been. With respect to the question of tuberculosis, it is coming somewhat new upon us.

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My friend thinks it is infectious. Well, when does the date of infection start from? Yours were tubercle cases I admit, Mr. President, but here we have families, some of the members of which go from home before they ever had phthisis, or were supposed to have had, and they, although distributed to various places, have died from it. When a number of such cases occur, is not that hereditary phthisis? I think it must be so. I cannot put them down as cases of infectious phthisis. I must have more statistics than I have before me now, and I think the matter still requires consideration on the part of the medical officer to an Insurance Company when you get the history of phthisis in the family. Of course, the rates proposed years ago by Sir William Savory and Mr. Wakley were somewhat excessive, but medical officers had still better regard with careful eyes cases of tubercle occurring in parents. If it occurs in one parent I think it is the duty of the medical officer to enquire about that parent's brothers and sisters and father and mother. If a kinsman dies suspiciously of bronchitis at an early age, I ask "How many brothers and sisters had your mother?" So-and-so. "How many are living?" So-and-so. And if I can trace any further history I should expect that patient to pay something for the risk of himself being a victim to tubercle. At least I think the offices should be protected against it.

Now there is the question of gout. My friend seems to have a terrible idea of gout. I confess I do not share it with him. Really, this is such an excellent paper that one could go on talking for any length of time, but I am sure my humble experience is not sufficient to prevent the Society having the experience of my friends all round. At the present moment I will just leave the matter with those few remarks, and I hope we shall have gentlemen of great experience telling us what they think about it.

Dr. Lyon: I will confine myself to the subject of tuberculosis. Some ten years ago I went into an investigation at the Mutual Life Assurance Office and into statistics of tuberculosis. We have had more than one thousand lives having a family history of consumption, and we had just about one hundred deaths. The facts were clearly

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before us that amongst those lives there was a very considerable extra risk due to family history of consumption. That is, that amongst those applicants who had been passed as good lives and had a family history of consumption there was a distinct extra mortality which was represented by about an extra five years all round. I heard Dr. Sprague say that a thousand lives are a very small number. I am not quite sure about the five years, but that is rather less than we usually estimate them on the whole. Then, on the other hand, a German actuary took out the figures of the National Life Office some years ago, and he came to the conclusion that there was no extra risk. But you see all this simply shows that we have not got enough figures. Dr. Sprague's figures and Mr. Manly's and my own agree at about five years as the extra mortality amongst those who pass the ordinary Life Assurance examination, but who have a family history of consumption. Most of those had a family history of the father or the mother dying. In this relation, I think, when I wrote my former paper, of course, one gave a great deal of thought to it; there seemed some confusion on the subject then which has been very much cleared up since, I think, by the overwhelming evidence of the direct cause of tuberculosis being the entrance of the bacilli, that it is absolutely an infectious disease. But, I think, there are three factors which are of very great importance in the question. I do not know which will be the most important. One is hereditary susceptibility, another habits, and the third infection. Now those are the three factors which you cannot possibly neglect nor can you say which is the most important of the three. I think they are all important. Of course, the direct cause of consumption is the tubercle bacillus. For instance, suppose the parent of an applicant dies of consumption at the age of 50. Now regarding consumption as an infectious disease, the fact that he has escaped tubercle up to the age of 50 proves that it was not from susceptibility to tubercle. It probably proves to some extent that he came into habits of life which reduced his vitality, and therefore made him susceptible to tubercle. Then again, if a man goes on up to 50, whatever his family history may be, if he is a sound life, supposing he has been in ordinary

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civilised life, how can he be very liable to consumption? It is impossible. For instance, one would never dream of rating up a man at the age of 60 who was unvaccinated because he might have small-pox in his old days. I mean if a man lived to 60, and had not caught small-pox, he never would; he would not be liable to it. With regard to small-pox the strongest man is as liable, as a rule, as the weakest, but in consumption it is not so. There are certain men who are born much more liable than others to consumption, and those men as a rule, can be spotted, as it were, by a good medical examiner.

Dr. Pollock: I shall only touch upon one point in the very able paper which our friend has read to-night, and which has given me great pleasure to hear, and that is the one with which I am most familiar professionally, viz.: tuberculosis. I have always been persuaded that tuberculosis is derivable by hereditary descent. Of course, I am very familiar with the modern doctrine that bacilli found in the lung in cases of tubercle may be reckoned as the cause, but the exciting cause, and that which we find in clinical practice, is the main point to consider. There is no doubt whatever from clinical evidence that consumption is, in a large number of cases, a hereditary—a transmitted—disease. I have myself been a worker on this subject, and I published, many years ago, the results of my enquiry. I found that out of about 4,000 cases which I had attended in hospital practice and investigated, at least 30 per cent. had the hereditary element. Now it will not do to get over clinical facts by modern theories; the microscope and the laboratory can never upset clinical observation. The writer of the paper has also referred to infectivity as one of the matters to be considered in accepting or rejecting an applicant for life assurance. The author said: "Provided the applicant has not lived in the same chambers, has not lived in his wife's room who had died of consumption, and his children had been separated off"—in fact, he held that infectivity was a direct cause of disease. Now I hold that there is another fact which is capable of proof by observation, namely, that consumption is not infectious in the ordinary sense of the word.

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The methods of the conveyance of consumption may be by tuberculous meat or tuberculous milk or by the sputun what has been spat upon the ground and allowed to dry up and become converted into dust—a species of inocculation. There is no doubt whatever of the fact that tubercle is conveyed from one person to another in that way, but that it is conveyed by the air or by contact of the wife with the husband or the husband with the wife, there is no evidence. Such assumption may be the result of future enquiry and further facts, but up to this point it has not been proved. I am sorry to see—because I am very much in favour of modern measures for preventing tuberculosis spreading—that some eminent authorities hold that it is not hereditary. How can we go against facts? The facts are accumulated in numbers. As regards the infectivity, Dr. Williams and myself have investigated it at the Brompton Hospital from the very beginning till now (that is nearly fifty years), and there have not been among the nurses, among those who scrub the floors, among the physicians and assistant physicians, the house physicians, dispensers, and others, more than four cases in fifty years. How is this difference got over? These are facts, ascertained facts, published facts, that have not been contradicted up to this time. Let us, therefore, in the advances of modern medicine, go on the firmly established facts of observers before we go one step further in theories. The microscope and the laboratory are not yet sufficient to account for consumption; a statement which I believe cannot be controverted. They are insufficient. They are admirable evidence, but they are not the whole evidence. You want the entire case, you want the evidence of clinical observation, you want the observation of facts which sensible men set to work to obtain and to make clear to themselves and to scientific observers. I am obliged to speak strongly on this point because I know the current of modern theory is rather against what I say, and, while I am entirely in favour and a member of the Association for Endeavouring to Stamp Out Tuberculosis, and while I would promote everything that can be done towards it, I must deny that it has ever been proved that there is infectivity even by the three or four cases at Corfu which our learned President has cited, but they are only

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three or four. Where are the nine? These things require to be proved by more facts, and I think that I shall carry the feeling of my brother members of this Association with me in this view. The practice in my Office has been, where there is one parent consumptive and the proposer is under 35 years of age, to add 10s. per cent. in every case. I do not think, on the whole, the endowment system is a sufficient compensation. Even an early endowment will not do. For why? What is the time when consumption is most incident—what is the age? Evidently between 15 and 25, but it often runs up to 35 and 45. Now an early endowment, by which we mean 50 and 55, does not meet the case. For these are the very years in which consumption is likely to strike. I, therefore, in the advice which I give to my Office, say "No, let us have no endowment, but let us have a whole life policy and make an addition of at least 18s. per cent." And when the second generation is involved, that is, when a parent and a brother or sister die, why, then the evidence is still stronger that there is something hereditary. Why did that group of individuals get any disease at all? Again, with regard to cancer, I have seen father and mother and grandchild all die of cancer under my own eye and observation. Why? What was the peculiar individuality, call it by what scientific name you will, which made that disease fall on that group of people? So it is with consumption. There must be something behind the infective process that has not been proved, something behind the bacillus that can be seen in a microscope, something that goes back for generations. There is nothing more clear in the whole history of human life than heredity. You are the type not only of your father and mother, but of some remote ancestor; your character, your frame, the diseases to which you are incident, the little tricks you practise in your room, in your bath, and so on, may have come down from some great ancestor. We know that things are inherited—habits, ideas, tempers, the morality, as well as the physique of a man, and if that is known and proved to be hereditary, why not diseases? Of course it can be said "Can you transmit bacilli through the semen or can a mother do it from the ovum?" I do not know how it is done,

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but all I can say is, that there is a field prepared for the seed without which the seed will not grow.

Dr. Williams: Dr. Heron's paper contains so many points that it really is very difficult to take one in preference to another. As a great many of them have been already considered I shall not attempt to go through the whole, but shall just touch on a few. With regard to the paragraph about the abuse of alcohol, opium and chloral, I will only say one or two words. With regard to alcohol, that is one of the greatest difficulties that any medical officer, to an insurance office, has to deal with. I was rather amused when my friend, Dr. Crosby, told us that the thing to look at with regard to alcoholism was the low specific gravity of the urine. Well, he forgets one thing. Look at the question of fright. I do not know that I am a very formidable individual, but as a matter of fact half the candidates that come into my room for examination pass, what I believe is called at the Royal College of Surgeons, water passed in the funk mood. When I take the specific gravity I hardly find it up to 1,008 or even 1,005; it is evidently passed in a fright, and I should be sorry to condemn all those individuals as alcoholic, for many of them are *poor frightened creatures*, and a good few total abstainers.

Dr. Crosby: I said it was a useful adjunct; I did not depend upon it.

Dr. Williams: Then as regards the question of vaccination, I think most of our present examination papers put down—"Have you been vaccinated, and when?" "Have you had small-pox?" and so on. I think, at present, most of our life offices protect themselves by such questions.

Dr. Heron: But do they extra-rate, if the answer is "No"? I find they do not. I do not say that all offices do not, but I find that they do not.

Dr. Williams: That reminds me of a story told me by Sir Dyce Duckworth, who is a member of this Association. A

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gentleman, whose father had been a conscientious objector, presented himself for examination, and said: "Oh, I have not been vaccinated because my father had a conscientious objection to it; we none of us were vaccinated." "Very well," said Sir Dyce, "You can do as you like, but, of course, my Board of Directors will charge you an extra rate of premium." The gentleman said, "Oh, indeed, that is very unfair." "Not at all so," said Sir Dyce, "I think they will probably put a high premium on the fact." "Oh, that is a very different thing altogether." "Well," said Sir Dyce, "You think it over; we will postpone the matter for a month, and if you can send me by that time a vaccination certificate, I will pass you at the ordinary rate." I need hardly say that the conscientious objection passed away and the individual was duly vaccinated. I think you will find that something of that sort will occur in a great many cases. Then with regard to naval and military and seafaring risks. I was enquiring at my own Office, and I find that the line taken is this. For a man in the naval service, 10s. extra is imposed; that covers foreign service and war risk, provided that this country is not actually engaged in war. What I mean is that if war had actually begun they make an extra charge, but for one that might spring up after insurance, they do not make an extra charge. Then with regard to the army, in my office they have got a certain rate; I think 10s. per cent. for foreign services; for India they charge £1 per cent.

Dr. Heron: For how long? Ten years is the usual, and then ordinary rates after that.

Dr. Williams: I think that is so. Then, as regards the West Coast of Africa, I suppose a great many offices would object altogether; but we put a prohibitive rate—that is 5 per cent. extra. Then, as regards the mercantile marine, they have a very curious plan. Certain passenger lines they consider very good. For instance, they will take the life of a captain or mate or first officer proceeding in a first-class liner to North America or the Cape free of charge; they will not put any extra on them. But, on the other

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hand, if they go to the Mediterranean, there is 7s. 6d. per cent. charged. Most of these rates are the result of their own experience. Then they charge other rates according to the place and individual cases, and so forth. But my impression is that a good deal of the charging is simply from accumulation of experience. It would be very much better if there could be an accumulation of facts, and the different offices might then hit upon some proper rules.

I now come to that burning question on which Dr. Pollock has spoken so eloquently, and on which he has had so much experience, viz., the question of tuberculosis. I must say I cannot agree with the reader of this paper. I cannot see how we can set aside the overwhelming evidence in favour of heredity having a distinct effect. I admit there is such a thing as contagion. People do catch phthisis occasionally—very rarely—but still they do. But from his point of view what does it mean? Heredity, from his point of view, means vulnerability. Now when you find, as we do find, that a whole lot of people who become phthisical are attacked at an average age, and that those who have no family history are attacked at a certain age by phthisis, and those who have a distinct family history—say of father and mother having died of the disease—are attacked so many years earlier, that seems to me clear proof that there must be something in heredity. This is proved on incontrovertible evidence. I was one of the first to demonstrate the fact, but M. Briquet, in France, also showed it; and Dr. Reginald Thompson, from the statistics of the Brompton Hospital, also showed it overwhelmingly, and he dealt with a larger number of cases, probably, than any other man has been able to deal with. We all placed our case-books at his disposal at the Brompton Hospital, and he worked out the problem in "Family Phthisis," a book which I commend to any gentleman who has not already read it. He clearly points out the exact relative value of the paternal inheritance and of the maternal inheritance. The interesting part is where he shows that when a daughter derives consumption, or inherits the tendency, if you like, from the father, she also inherits a certain amount of vitality to resist the disease. On the other hand, if a son inherits from his mother, he does not acquire that

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resisting power at all, and he is much worse off than if he inherited the disease from his father. All these details have been worked out over and over again. Another kind of evidence occurs to me to allude to—although gentlemen in this room have heard cases of this sort over and over again—because it is very strongly in my mind. A father and mother married, and had six or eight children. The children grew up and were apparently healthy. The mother died of consumption. The children were scattered in different parts of the world, but, curiously to say, out of six children four died of consumption, one in North America, one in South America, and one in the East Indies, although they left home at a comparatively early age. How are you to explain these deaths from consumption? It seems to me as clear as possible that the children inherited the mother's vulnerability. The bacillus attacked them in North America in one case and in South America in another; it is still the bacillus, if you like, which is the acting cause, but the vulnerability has come from the parent. If we look at it in that way, viz., that vulnerability can be inherited, how simple it all appears. We get vulnerability from other causes; you may get it from bad habits, deficient food, damp soil, or a number of other sources; but surely you can get it, and more directly, from absolute inheritance. I am quite ready to admit with Dr. Heron, that there are cases where sisters certainly contract it from each other, from sleeping in the same bed and not taking proper precautions, and I admit that formerly it was attributed to hereditary taint and to nothing else. There are those cases, undoubtedly, but what I want to know is how did it come about that those children whom I have mentioned were not attacked quite early? If it were from infection they ought to have been attacked before they left the parental roof, and not acquire it, as many of them did, ten years afterwards in a different place, having enjoyed excellent health up to that time, and possibly been passed by an insurance office. Dr. Pollock and I have seen plenty of hereditary cases; we know whole families that are swept off by phthisis. There is one family which Dr. Pollock attended in which consumption appears to be inevitable—sister after sister, brother after brother, perish from the disease wherever

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they are. They may have been at home, they may have been in different parts of the globe, but they are sure to be attacked. I am sure I have detained you too long already, but I feel very strongly upon this subject.

Adjourned Discussion.

January 4th, 1899.

Sir Hermann Weber, *President, in the Chair.*

Dr. Symes Thompson: I shall venture, Mr. President, with your permission, to make a few observations on this paper, which, if we can criticise it at all, errs on the side of having so many subjects that it is really extremely difficult to decide upon which to speak. Dr. Heron has really given us Christmas fare; he has supplied us with such very varying and attractive food that it gives us pabulum enough to last for the whole year. It is exceedingly difficult to know which points to select. In the discussion which arose when the paper was read there was a great deal said—and very well said—on the subject of tuberculosis, and I do not propose to say more upon that point; but there are two or three perhaps less important points—but still, important ones—upon which I think it might be well to speak.

The first is vaccination. I feel that, under the present conditions, after the great change which has taken place in consequence of the new Act, and the vast number of those who are no longer vaccinated, that in the presence of this danger we, who represent insurance offices, should do well to come to a decision to take action in this matter, and be perhaps even more firm than we have been in the past in obliging people to be vaccinated or to pay extra for not being vaccinated. There are so many of our insurances carried

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out in connection with loans, that practically it is very difficult for us to say to proposers, "We will give you your policy on condition that in the event of death from small-pox you have no claim." We find practically that that is a position which in many cases cannot be taken up, and I suppose we cannot insist upon it; but we may, under present conditions, act with greater force than we have done, and I think the suggestion which Dr. Heron makes—that this Society should speak with no uncertain sound in this matter—deserves our fullest attention.

The next point to which I would refer is the question of tropical and military risks. With regard to the tropical risks, I find that in different offices there is a good deal of variation in this matter. There are some offices that "go in for" tropical risks, as we may say—they wish to encourage the insurance of those living in the tropics or going to the tropics, and they facilitate in every way they can the admission of such cases by reducing the extra rating and by diminishing those limitations which have hitherto prevailed as to the parts of the world to which proposers may go. Other offices have been somewhat severe in the opposite direction. The office with which I am connected, the Equity and Law, has considered the question of tropical rates from time to time, and has not seen its way to remove the extra payments which proposers are called upon to pay, because it has so happened that we have had considerable losses in connection with our tropical cases, somewhat more perhaps than has been the case with other classes, and the losses have been especially in connection with the first three or four years of life in the tropics. If a small number of those who are proposed die within the first two or three years of their proposal, of course the loss is considerable. It matters much less if the lives drop at the end of a long period, but if they drop quite at the commencement of their insurance the loss is very large. So that, whilst the number of claims have not been larger, the particular claims have been rather serious ones, and that being the case, we have not seen our way to reduce the tropical ratings so much as in some offices. Then again, as regards the places to which people may go in the tropics, I looked up a printed form at

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the office to-day so that I might exactly see the way in which it is worded. I will not go into the matter fully, but I will refer to the fact that we have an exception in the case of the West Coast of Africa. It may be pointed out that this ought not to be the only exception. We have on the East Coast of Africa places as dangerous as those on the West Coast, which some decades ago were recognised as being so very dangerous to life. We have in the central parts of Africa, and along that portion of the Nile which is now being opened up, very great dangers. In the Soudan, north of Khartoum, we have a dry climate, which in winter is not a bad climate, but directly we get to Fashoda, and from Fashoda to Uganda and the great lakes, we get into a region of tropical vegetation, great humidity, and very great dangers. So that if we are, as is not unlikely, proposing to send a good many of our soldiers and civilians to these regions of Central Africa, we must prepare to meet great losses, and I think, therefore, that the offices would do wisely to regard Central Africa in the same way as the West Coast.

Then as to the military service, which is an allied subject with the tropical rating, we have a variety of methods. Of course, it is exceedingly trying to an officer, just when he has the expense of starting for active service in the tropics, to find he has also an additional expense in heavy rating for the tropics and a still larger rating for active service. The uncertainty is so unsatisfactory that officers as a rule are more ready to pay a fixed annual sum instead of paying the great varying sums which they are called upon to pay. It used to be the plan for men joining for military service to pay an extra pound or 25s. a year. This has been done in a good many offices, and in the office with which I am connected the pound has been reduced to 10s., payable at the time the policy is commenced, and extending during active service. It is not only paid during an active campaign, but for the whole time of his remaining in the Army. That, I think, is a fair charge. Then we have other charges for civilians and for officers. They pay a pound for the first five years. That seems fair enough, because the risk is so much greater during the first five years. I think, on the whole then, that the

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tendency of offices in this and other respects to diminish their charges is a fair and proper one, but I am sure there is a great deal in the point that Dr. Heron has put before us that with the greater destructive power of modern instruments of warfare, whether by land or by sea, the dangers to our officers in the Army and Navy will become greater rather than less. Those who have suffered from tropical diseases—malarial fever, dysentery, &c.—should not be excused from extra rating. If they contemplate a return to the place in which tropical disease occurred, they ought probably to be declined outright, for it should be remembered that directly these "damaged lives" return to England, the tropical ratings are taken off.

I will say no more about these subjects, though each one of them seems to give scope for considerable discussion. I will not say anything more about the question of family phthisis, although I should like to have done so. My views were very much expressed by Dr. Pollock, and I do not think I have much to add to what he said. The cases which come under our notice from time to time in which peculiar forms of tubercular disease occur in a single family, occurring at the same time of life and of the same character, seem to imply that there is not merely an inheritance, but that there is an inheritance of a special form of phthisis which may perhaps be due to a special vulnerability; but, at any rate, we cannot put aside the fact that there are in many families characteristics which show themselves in relation to tubercular diseases, just as they show themselves in relation to every other form of inheritance.

Then as to the question of obesity. This class has proved an extremely unfavourable one in the Equity and Law Office. When we made a digest of the cases in which extra rating had been applied, those in which extra ratings had been applied for undue stoutness proved to be a particularly unfavourable class. Of course, the estimate as to what stoutness is requires much skill on the part of the medical examiner. This skill, of course, is needful universally, but especially in the direction of stoutness, as in the direction of habits. We may have heavy men with immense bone and muscular development who are not necessarily bad lives. It is in the excessive

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fat the danger rests. I may say, in passing, that it seems to be a great responsibility to have abnormally large muscles. Those who have abnormally large muscles find that, unless they keep up active exercise through life, their muscles become a snare to them. They suffer from lumbago and other affections, not absolutely fatal affections, but affections which give them a great deal of trouble, because their muscles have been so highly developed. With regard to the little spice the author has put in his paper, the suggestion that before selecting an office a stout man would do well to ascertain the presence or absence of stout men among the directors, I think that might be extended a step further, and it might be suggested that he should also take note as to the stoutness or otherwise of the medical officer, because I think that would probably still more affect the decision. So, too, with reference to tobacco. I think if anyone is conscious of an excessive use of tobacco he would do wisely to go to Dr. Heron and be examined by him, because he has clearly intimated his intention of letting off very easily those who err in this direction.

In a sketchy way, I hope not too lightly, I have referred to a number of these questions, but I will not ask you to listen any longer to what I have to say. I confess I should like to have spoken more fully on many points.

Sir William Broadbent: I am very glad, Sir, to be here to-night, by invitation of Dr. Heron, because this subject is one of extreme interest, and I have followed with very great interest both Dr. Heron's paper and the discussion which has ensued upon it. I have not myself been engaged in insurance work, except lately in a very moderate degree, and have therefore in a way no right to speak, certainly no right to speak on these general questions which relate to the tropics and army service and the like. There are some subjects, of course, which come under my observation as a physician and in which the relation to life insurance is extremely interesting and important. I note that Dr. Heron says nothing about syphilis, and that the only speakers who referred to it seemed to pay extremely little attention to syphilis as a fact in previous history.

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My own judgment with regard to it would be that it is a really very important fact in a man's previous history. One sees so many cases of disease of the nervous system, of aneurism, and of other maladies in which syphilis is antecedent, that if I had any views in the rating of subjects I should never be content with less than five years over-rating on the ground of syphilis, notwithstanding that I see Mr. Jonathan Hutchinson's opinion is apparently to the effect that syphilis has very little influence on the after-health and after-life. My own view is very much reinforced by Dr. Oliver's observations on the effects of syphilis upon the circulatory system even in apparently healthy people. The question which is really of the greatest interest, of course, is that of tuberculosis and what is required in the rating of apparently healthy lives in whose family there is a tubercular or consumptive history. Evidently this will depend entirely on the view we take of tuberculosis. Is it, or is it not, an infectious disease; and is it, or is it not, true that all cases of tuberculosis are derived from a pre-existing case by way of infection? I think the whole of modern search tends in that direction, and that we must come to look upon tuberculosis of every kind as communicated from person to person or from animal to man. This, of course, does not in the least degree invalidate the old observation that consumption runs in families, that there has been something which has seemed to be hereditary in the transmission of this disease. One has, then, to enquire whether this hereditary tendency, or, as I think it must now be put, this hereditary liability, can be explained in any way, taking consumption generally as a disease communicated by infection. As Dr. Heron has pointed out, and has illustrated by facts communicated by yourself, Sir,—a great deal of this apparent heredity can be explained by the fact that in a family in which tubercle prevails we may have the fact that this family is living in an infected house, that from generation to generation they are more exposed to the communication of the tubercle bacillus than their neighbours, and this alone goes far to explain the apparent hereditary tendency to phthisis. In addition to such facts as were quoted at Corfu and other places, I have personally known instances in which

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family after family, going into the same house, became tuberculous, the house not having been disinfected and freed from the infection. Then I think another item in the explanation of the prevalence of phthisis in given families, in given neighbourhoods, is the well-known influence of atmospheric moisture, the influence of bad ventilation, and the influence of habits which lower the general tone and diminish the resistance to any kind of disease. There would still, perhaps, remain a residuum, in which a proneness to tuberculosis existed, which is not explained by any of these facts. But then these are not the typical healthy lives; these are the people, a description of whom serves as the type of tuberculous people, with long necks, sloping shoulders, flat chests, and bad development. These would not be our healthy lives under any circumstances. It seems to me that, when a person in full vigorous health presents himself for life insurance, and there is a history of phthisis in the family, the enquiry which is to bear upon his rating would not be specially as to how many of the family have fallen victims, but as to the circumstances, the surroundings, and the special exposure to infection. As I say, providing the individual is thoroughly sound and healthy and strong, even if there has been a very considerable history of phthisis in the family, supposing the enquiry shows that he has escaped at an early age from the infectious and unfavourable surroundings, generally no amount of phthisical history in the family would prevent one from rating him as a first-class life. All of us must be familiar with instances in which the sole survivor of a phthisical family has lived to a very advanced age, he having resisted the infection while he was exposed to it, and having been removed from the chances at an early period of life. All that I have said simply amounts to a general agreement with what has been laid down by Dr. Heron. As I say, I think the enquiry no longer turns solely or mainly upon the amount of phthisis in the family history. The enquiry turns a great deal on the degree of exposure, on the surroundings, and on other points which make for or against the constitutional resistance.

Sir Hugh Beevor: It was with great pleasure, Sir, I heard, and

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still more that I read, Dr. Heron's valuable paper. I have the inclination to follow the various members of the Society who have addressed us in specially paying attention to the question of tuberculosis. First I would ask one question of Dr. Heron with regard to obesity. It is an impression of mine, of which I have no evidence, that women are not exactly to be taken as men, that they must be dealt with rather more leniently, and that thoroughly temperate and well-to-do women live longer than men, although they may be equally obese. The criticism that Dr. Heron passes on the 1882 report of the Briton Life I think may, in turn, be criticised. He made an allusion to its being rather before the time of the knowledge of house infection, but one of the compilers of that Report, I believe, gives one of the best instances of house infection that I have seen. Sir B. W. Richardson, in "Health and the Home," cites this most remarkable case. A cheap-jack lived with some of his family in his van. He died of consumption. He was succeeded by his brother, who followed precisely the same line of life, lived in the same van, and he took consumption and died. He was succeeded by his sister's husband, who shared the same fate. In the course of seven years Dr. Richardson had seen no less than nine victims of the fatal pulmonary disease, in every one of whom it seemed to have originated in the particular travelling van. Though he protested against his patients continuing to live under conditions so favourable to the disease, they argued they were constantly living in the open-air all day, that they got regular change of air, that they were not exposed to wet, and that at night they were very snug in their van—in short, they would not believe that sleeping in the van-house had anything whatever to do with it. Dr. Richardson was alive to the fallacies that house infection and family overcrowding make in computing hereditary influence. It will, however, not be long before we get the evidence which will reconcile opinions apparently opposed. Dr. Heron points out that we must submit the weakling to an extra rating because he is more prone to fall a victim to disease. We agree that a parent succumbing to the disease, should so far suggest a weakness which would allow of a rating up on the slightest evidence of the fact. Evidence of such

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weakness is shown to be very often present. Referring to the Mutual of New York report of an earlier date, 1887, it states that out of 1031 dying from consumption, 18·8 per cent. had a family history of phthisis, and of those who died from other diseases only 9·9 per cent. gave such a history. Now, if that is confirmed by the experience of other offices, it is a sufficient evidence of weaklings. The more recent report of the Mutual, quoted by Dr. Heron, points out that the weakling may generally be detected by his personal condition.

In looking up the former experience of some offices, it is very remarkable how the selection of lives seems to have saved the company in a marvellous way from phthisis. The Scottish Widows' Fund has had 1000 deaths from phthisis in the last 35 years. The only feasible comparison which I can make, is just a rough one, and is the occupation statistics of the Registrar-General, which shows the experience of this office to be better than the best occupations, the railway engine driver and the clergyman. There is one point in which I think that nowadays we are all a little apt to be misled in thinking that because consumption has decreased so much—I think in 45 years it has decreased one-half in the general population—that it has also done so among the class who come up to be examined for insurance. But formerly those who were insured after selection showed a death-rate which was very, very slight compared to that of the general community. The figures of the Equitable long ago, 1801 to 1832, showed a rate of only 17 per 1000 living after age twenty, whereas the expectation under the Carlisle table—it was a particularly healthy district at that time—was 34 per 1000. In evidence that this decline has not gone on very much in the insurance offices, the selection having had the effect of weeding out those who would get phthisis, I would take the figures for the four last septennia of the Scottish Widows' Fund. The percentage of deaths from phthisis on the number of lives at risk from 1867 to 1873 was 1297; from 1874 to 1880 it was 1366; from 1881 to 1887, 1276; and it then declined in the last septennium, when it was 1066. It showed no decline until the last septennium, from 1888 to 1894.

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If I may be excused from following the subject of tuberculosis into a matter not particularly bearing on insurance so much as upon the question of how we are to look at it when we make enquiries, I would refer to the general mortality in England and Wales, and it seems that there is a very marvellous equality in the incidence of the death-rate from phthisis both in time and place. It is perfectly marvellous how evenly distributed it is all over England—not only *is*, but has been, and the variations between one place and another in any part of England are nothing really, or no more than, the variations between one place now and what it was thirty years ago. And yet the places have not changed their relations; the places which were very bad have got better, and the places which were bad have got good, and their relative position has remained very much the same. This slight difference, remaining local and persisting, makes it very unlike our infectious diseases. Of course, one does not expect to see it very like the ordinary zymotic diseases which, if you took a map of their distribution, would appear coincident with the density of population, but it is utterly unlike them in these relations of consistency in locality and in general equality. This seems to imply either one of two things, that there is practically no infection, or that the infection is ubiquitous. For this country I should hold that the latter is the case, that infection is ubiquitous. With regard to the question of there being more opportunities for infection than formerly was recognised, one may quote Professor Delépine, who, some time ago, when speaking before a society, pointed out that here was an enormous amount of accumulation of tuberculous poisoning from the domestic animals, and that it is quite possible that there is as much tubercular poison poured out on the ground from tuberculous animals as there is from the sputa of men.

I have had some very valuable evidence given me by one medical officer of health—Dr. Plowright, of Freebridge Lynn; and I asked the medical officer of health of another district—Dr. Lack, of Norfolk—to give me his experience. Both give figures for the whole of the district for twenty years. The medical officer of health of Freebridge Lynn, in a population of 12,000, found that the death

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rate was eleven per 10,000, and that no less than 33 per cent. occurred in families in batches of two or three or more in a family—that ten per cent. were imported, and that the cases that occurred more than one in a house were in seven per cent. of houses. The other record, which deals with all the houses of a district containing a small population, only 1600 for twenty years, gives a death-rate also of eleven per 10,000; the amount which occurs in families, is 37 per cent.; the imported cases are rather more than in the other case, thirteen per cent. The cases which occurred more than one in a house are in ten per cent. of houses. It is a coincidence, and although the figures are small, I hope they will form the nucleus of fuller information of the same kind. It is very interesting to consider that any man who looks at the family history of the case can immediately see what an immense amount of infection there is; and every man who looks at the house sees what a very small amount of infection there is. The infection in relation to families requires a considerable amount of compilation of this sort of record to find out how far it is a matter of infection and how far it is a matter of susceptibility. Infection is the spark and susceptibility is the tinder, and the susceptibility in most of the cases, where there are a large number of families suffering from phthisis, is quite evident. We know if there is a very large family there is also a very great overcrowding, and the condition of acquired susceptibility immediately comes in. I might quote a single instance, the only one which happens to be recorded in this list, of an experience where three generations all had it. The first man died at the age of 65; his son died 22 years old, sixteen years after his father, and had been living for a considerable time in a different house. It is only by getting a number of these together that we can find out the truth. One would say it was probably hereditary in this son, possibly latent. A few months later the third generation died, a child aged one year. There we have a case which is probably infective, but possibly hereditary. It seems that the difference in the views which are taken of the tinder, which is more important than the spark, as to whether it be hereditary or acquired susceptibility, is often due to those considering the questions having a

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larger experience of the wealthy or the poor, because in the poor the infectivity is apparent to a far greater extent than it is among the wealthy. My view of infection as being ubiquitous implies that we should in our consideration of the question view disinfection and isolation as not the first line of defence, because if it is ubiquitous it is much harder to attack than the susceptibility, which is more limited. If you counteract the susceptibility which is limited, by paying great attention to what Dr. Ransom called "air sewage," the bad ventilation which concerns so many of these infected cases, we shall more quickly bring phthisis down to a much lower point, and when we have got consumption down to a much lower point than it is now, we can proceed on measures more directly opposed to infection.

Dr. Vivian Poore: There is a great deal in what Sir Hugh Beevor has said with which I most cordially agree; in fact, the immunity of the individual, which may be brought about by the open-air treatment of phthisis, even with the disease upon him, is one of those startling things, which, I think, we may take to be a fact now fully established. There is another point in regard to the phthisical history and recommending whether a man should be rated up or not—I certainly should look very closely into his residence and his occupation. There is no more interesting publication throughout the year than the annual summary of the Registrar-General of the health in London and the great towns, and in that annual summary, which comes out in May, I think—or somewhere thereabouts—you will find the death-rate from phthisis in London, in the various sanitary districts, after the distribution of deaths occurring in hospitals and public institutions. I cannot give you the exact figures, but you will find that in the centre of London, the death rate is 3·6, while at Hampstead it is ·94; and as you come from the centre to the circumference, you will find the death-rate from phthisis declining as the distance from the centre increases. Supposing there were a bad family history, I should look more critically upon a man who is going to keep a draper's shop in the Strand than I should upon one who is going to be a farmer in Norfolk or

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some healthy district. I think there is no doubt whatever that while one will eradicate his family tendencies, the other will almost certainly fall into them. Again, turning to Dr. Tatham's supplement to the 55th Annual Report of the Registrar-General, the relationships of disease to occupation, the facts there with regard to phthisis are startling. For instance, it shews (taking the extremes, of course), that the death-rate from phthisis is ten times as great in the hotel servants of London as it is in the coal miners of Nottingham, the coal miner of Nottingham, strangely enough, in spite of his dusty occupation, enjoying almost the lowest death-rate from phthisis. Of course, the other miners—the mineral miners and so forth—have a death-rate exceedingly high, but the coal miner's death-rate is exceedingly low. With regard to one or two points alluded to in the discussion, I noticed that Dr. Crosby (whom I am sorry I do not see here to-night), laid rather important emphasis (in relation to the question of alcohol) upon the specific gravity of the urine. Well, I am inclined to think that one testing of the specific gravity of the urine is not worth much. We know very well that if a man has had a glass of water for his lunch, or has had two, it gives us a very dilute urine. I do not think one testing is of very great value. With regard to what Dr. Crosby says, that candidates sometimes come prepared for their examinations, and abstain from alcohol and so forth, I had a curious case before me the other day, A hale man, advancing in life, a business man from the country, came up to me for examination. There had been some doubt as to whether he had glycosuria or not. Some doctors in the country thought he had, and some said he had not. He looked as healthy as a man could look. I examined his urine very carefully and there was no sugar. I asked him, "What did you have for breakfast?"—it was about 12 o'clock when I saw him. "Well," he said, "I had a basin of beef tea and two eggs." I said, "That is a funny breakfast: did you have any bread?" He said he did not have any bread. He had been prepared, and I think people do come prepared, and that is a very important matter.

Dr. Heron alluded to the morphine habit, and I think I may tell a story, because our personal experience is useful to each other.

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Sometimes you feel inclined to reject a man simply from appearance. He comes before you and you put him through the examination. You find no physical or family defect, and yet somehow or other you do not like him. I had one of those men a few years ago. I did not like him. He stripped to a long jersey, and I examined his chest without removing the jersey. His lungs were all right, his heart was all right, but I did not like him. I said, "Will you take off the jersey." He did so, and I found an eruption on both arms. I said, "That is a curious eruption you have on your arms; what is that?" He said, "I am very fond of working at a forge and the sparks fly out and I burnt my arms." I did not quite like that story. I took up a lens and looked at his arms, and I found that at one spot was a fine puncture with a little swelling about it. I looked him fully in the face and said, "Do you use hypodermic injections of morphia?" and he admitted it. That was a case where perhaps I was wrong in not taking off his jersey at once, but if I had not taken his jersey off, the case would not have ultimately explained itself.

With regard to vaccination, I confess I do not take the alarmist view that some people do. It has fallen to my lot to see at my office a good many cases, but I do not know that I can recall to my mind a single man who has not been vaccinated. I do not think I have at my office a single "rabid anti," if I may say so. They are not the class who do insure. They are a class a little below the insurance class. The man who insures is generally vaccinated and is protected, and I think that is a fact that is sometimes a little lost sight of.

Dr. Theodore Williams: The difficulty is where the parent does not have the child vaccinated and the child grows up into a man. You have the son of the anti-vaccinator to deal with. Those are the difficulties.

Dr. Vivian Poore: The unvaccinated man?

Dr. Williams: Yes, on account of the sins of his parents.

Dr. Vivian Poore: Yes, but sometimes people talk as though

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the presence of a few unvaccinated people was going to cause a fire of small-pox throughout the country. On the whole, Sir, I think that in these days of anti-vaccination, when small-pox appears amongst us, we shall rush for the vaccine tubes just as they do for the buckets of water when there is a fire. I do not take the alarmist view. I think that the fire of small-pox will be put out quite as certainly as an ordinary fire, and without ruining the insurance offices. Small-pox holds a unique position, inasmuch as a sure preventive is within the reach of all. Would that we could ward off influenza with equal certainty.

I have extracted from the Registrar-General's figures the death-rates from all causes and from small-pox for the two epidemic years (1871-72) and the years preceding and following.

DEATH-RATE PER 1000 LIVING.

	From All Causes.	From Small-Pox.	
1870 ...	22·9	·113	
1871 ...	22·6	1·012	Epidemic
1872 ...	21·3	·821	Epidemic
1873 ...	21·0	·098	

From this it is evident that, notwithstanding the epidemic of small-pox, the general death-rate continued to fall, *i.e.*, the public health was favourable to life offices. It is also evident that the epidemic was quickly extinguished. At my own office, except in 1870-71-72, a death from small-pox has been practically unknown. For the two years 1870-71 and 1871-72 there were seven deaths from small-pox out of a lot of 359. Of these, three occurred among *German policy holders*, which is an interesting fact. I can obtain no information as to the condition, as regards vaccination, of those seven persons who died of small-pox. In my office the small-pox deaths were to the total deaths in the proportion of one to 51, while in England generally the proportion was as one to 22. It is well

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known that a large proportion of small-pox deaths occur in children under ten. It is certain that an epidemic will stimulate re-vaccination of adults quicker than an Act of Parliament, and this is the form of vaccination of most importance to insurance offices.

Dr. Hingston Fox: I wish first to allude to the title of this paper—"Some Extra Ratings of Healthy Lives." Surely, a "healthy life" is one which, on the evidence of personal condition, of history, habits and occupation, and of family history, we find to be unexceptionable, or to come within the margin of good average lives. In that case, an extra rating is inapplicable. Is not the subject of the paper rather "Some Extra Ratings of Lives which Appear to be Free from Disease"? Then, with regard to the use of alcohol. Dr. Heron's criterion of moderation is the medical examiner's experience in his own person. I would enlarge this by adding his experience of his patients and of others generally. We have to ask the question "Does this man's use of alcohol interfere with his health?" Then Dr. Heron would absolutely reject those who showed any tendency to alcoholic excess, but otherwise accept on ordinary terms. I think we must have an intermediate class, and sometimes accept at an extra rating those whose habits in this particular are such as to raise a slight suspicion of excess. Excessive use of tobacco sometimes leads to inebriety. A claim came before me lately for a man who died early from alcoholism, and it was noted on his proposal form that he was an excessive smoker. As to vaccination, it would be very desirable, in the present condition of public opinion, if the offices were able to unite in a common practice with regard to the taking of unvaccinated persons. Some boards of directors are much more lenient on this question than others, and I think that, in spite of what Dr. Poore has said, such offices may have to buy their experience in this matter dearly. With regard to tropical residence, one of the offices with which I am connected gives world-wide policies from the first, and another makes a surcharge for the first three years, and, after that, world-wide. But both pay special attention to foreign residence, actual or intended, at the time of insurance, and only accept, at an advance upon the age, those who

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are going out to any unhealthy climate. The plan of the world-wide insurance, after a few years of extra rating, seems to act very well from the actuarial point of view.

I thank Dr. Heron for his discriminating remarks about the different kinds of obesity. There is also the question of insufficient weight, relatively to the height, which is probably quite as risky, especially, I think, when associated with a dry skin. Dr. Heron is fond of the use of endowment policies for cases which seem to need a little extra rating. I doubt whether this should be a frequent course of action. The rates for such policies are calculated on healthy lives, and it is hardly fair to the average lives which are placed in this department to put in many doubtful or impaired lives without an extra. In some cases, indeed, the increased risk is so slight that the diminution of risk which ensues by adopting the endowment form, and so cutting off the later ages, may fairly bring it within the margin of average risk. But the actuaries object to our loading the class of endowment policies with a number of weak lives.

Then as to the last topic—the question of tubercular family history—may I quote the words of Dr. Lounsberry, Medical Director of the Security Company, New York? He says: "Everyone lives in the presence of tubercle bacilli. It is highly probable that every man within sound of my voice has had in his lungs tubercle bacilli. Why did he not contract consumption? Because he was immune, and such immunity is only enjoyed by those in robust health and of good ancestry." We have to do with the specific germ on the one hand, and with the question of vulnerability, or immunity of soil, on the other, and surely this latter is what we must seek to measure in our insurance work. The chief evidence for judging of that immunity or vulnerability is, first, personal condition, then habits, and then family history. Sir William Broadbent has put before us an explanation of the family history of phthisis which may be given from the infective point of view. But if we grant all this, is it not still for us a most important fact, that we have this family history of phthisis, and that persons with such a family history do die of phthisis in much larger numbers than others? It

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may be in part in consequence of infection, it may be in part in consequence of living in the same house, or having the same habits or the same occupation. It may be not strictly from inheriting anything from another, yet the fact is the same that they do so die. Therefore, whatever may be the explanation, I submit that we are right in following the rule (not without its exceptions) of putting an extra rating on proposers who have a family history of phthisis. Moreover, most of us have to deal with a large number of country proposals, which we have to judge often upon small data. It is not as though we had the proposers before us, and could see what their chest development was, and so forth. Now, when in these cases we read a family history of phthisis, and know that persons with this family history acquire phthisis in larger numbers than others, we cannot do other than safeguard the company by putting on an advanced rate.

I will conclude by mentioning a special kind of policy adapted for cases with a tubercular family history, which I had the honour of bringing before this Society in 1895, the contingent deduction policy, where the premium is not increased, but a deduction, gradually diminishing as time goes on, until it is extinguished when the period of expectation of life is reached, is taken from the amount payable at death. In this way the risk of early death from phthisis is especially met.

Dr. A. T. Davies:—I had not the pleasure of hearing Dr. Heron's very useful and interesting paper, but I should like to make a few remarks which occur to me on it. I was very much disappointed, as Dr. Fox said in the earlier part of his remarks, with his definition in the paper. It seems to me that he has thrown back upon each one of us what we each individually find in a healthy life. It rather reminds me of the old story of asking, What is the function of an archdeacon? The answer is that he performs archidiaconal duties. You do not get any further. He does not define himself; he leaves us to define.

Dr. Heron:—That was my intention—I had no other intention.

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Dr. Davies :—As regards obesity, it is a matter which has often perplexed me what to do with these obese persons, and I am very grateful for the remarks Dr. Heron has given me on that point. No one, as far as I have heard, has touched on the question of insanity. I think there is a distinct fallacy which comes in with regard to this. I know there is a tendency to rate up people who have insane parents, but I think there are certain forms of insanity in which this is entirely unnecessary. The modern method of treating insanity is so humane, and tends so to prolong life, that I know a great number of people who have insane parents, but who have lived out the full expectation of life. I think, therefore, it is rather hard to rate up without explanation. Now, as regards the question of tuberculosis. I entirely agree with Dr. Pollock and Dr. Williams. One may regard as part of Dr. Heron's paper the question of the hereditary tendency. I think I agree that, in certain cases, infection does play a part. I lately had a striking instance of a gentleman sent to me from Geelong, Victoria. Three of his daughters were attacked, one after the other, with consumption, then his wife, and then himself. That points to infection taking place. But, still, the cases in which infection can be proved seem to me very few in proportion to what we should have, and that it cannot play so important a part as one would think. I should entirely agree with those who express views on the relative tendency. As Dr. Pollock so ably remarked in the first part of the discussion, all the cases which Dr. Heron brought before us—and Dr. Heron did not bring forward any cases of his own—were nine which proved the infectivity.

The President : I think Dr. Heron has very good reason to be satisfied with the discussion to which his paper has given rise. It is late and I will not detain you with any remarks of mine, only Dr. Heron mentioned my name in relation to a peculiar occurrence which is of importance with regard to the theory of infection, which Sir William Broadbent has so well brought before us. When in Corfu, two years ago, a very intelligent Greek physician, of half English extraction, went with me to the Hospital and introduced me to the principal medical officer there. We went round with him

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and came to the consumption ward. I said, "You seem to have many cases of consumption," and he answered, "Yes, and it is increasing rapidly in the island, most rapidly." I said, "To what do you attribute it?" He said, "Well, it has been introduced." He went on to give some instances, and the most glaring instance in his own village, Gastura, which is one of the most delightful spots on earth. It lies on a hill. On account of its beauty the late Empress of Austria has built a palace there. "Well," said this doctor, "I am a native of Gastura, and commenced my practice with my father, who was a doctor there. Consumption was entirely unknown to us. I then came to Corfu, and while I was here, a rich foreigner settled at Gastura, and he died there from consumption. His clothes and all his possessions were distributed amongst the poor, and from that time consumption has increased most rapidly, so that at present it is the most prevalent disease." That is an important fact, and he gave me several others. I think that Dr. Lyon has put that matter in a few words, which seem to me very true. He said there are three factors: (1) heredity; (2) habit; and (3) infection. I think we have in those three words—although we may understand them rather in a different way—the most important subjects with regard to the spread of phthisis. Some time ago I communicated the history of a family, which shows this in the clearest possible way. About forty years ago, I attended a man and his wife at the German Hospital for consumption, and they died under my care. They both belonged to the most tainted families, families tainted with consumption on both sides in the most remarkable way. These two had seven children. Of these seven children, one, at the time I became acquainted with them, had already died from tubercular meningitis. There were thus six left between the ages of twelve and one. On my advice they were taken to the mountains of Silesia, where a relative of theirs had some property. The wooded mountains of Silesia are the most healthy in the world. The eldest, aged 12, remained well during the time of his university career, until after his examination; when he was 23, he began to study the origin of languages, and he worked at it night and day in the closest room, taking his meals

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there. Rapid consumption came on and he died. The second become a farmer and was remarkably well, the picture of health, when he came to London to earn money. He was going to be married, and was not satisfied with what he could earn as a farmer; he went to an office, and worked, besides, very hard in the evening at home, to make himself thoroughly acquainted with certain financial points. After two years of such work, he became consumptive, and died of rapid consumption. He had, therefore, been, in spite of his heredity, well up to the time when he placed himself under these injurious influences. I think this comes under the head of what Dr. Lyon called "habit." He exposed himself to infection, and put himself into a condition in which the tubercle bacillus could grow. The other children were all educated in a satisfactory way, and remained in the country, and led an open-air life, with the result that up to eight years ago, when I received the last communication from them, they were perfectly well. Therefore, heredity is one thing, habit is another thing, and infection is a third thing; but heredity can be made innocent, we can say, by habit, or we might give it another name, perhaps a better name, and say by the manner of living. I think now, gentlemen, it is high time we gave Dr. Heron the opportunity of replying.

Dr. Heron, in reply, said: I thank you, Sir, very much, and the Society, and my friend, Sir William Broadbent, for the very kind way in which this paper has been received. Of course, I know that it contains too much; that is the criticism which everyone has made, or almost everyone, and I quite agree with it. Dr. Symes Thompson described it as Christmas fare. I can only rejoice that you did not follow the instincts of Englishmen, and make mincemeat of it, at this season of the year! I shall be as brief as I can, because already it is past closing time. Dr. Crosby's remarks, with regard to the examination of the urine, in connection with suspected alcoholics, was touched on by Dr. Vivian Poore. What Dr. Poore has said is a criticism which must have occurred to most of us. I think the examination of one specimen of urine, for the sake of its specific gravity, ought never to be relied upon—I mean

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one specimen passed in the presence of a medical officer; I do not mean a specimen taken from the whole of the 24 hours urine. To test such a specimen, if we could get it, would be a good way of examining the urine. Another remark of Dr. Crosby's was with regard to the measuring of the empty chest, and the girth of the man round his waist, or where his waist should be. I quite agree with Dr. Crosby, but I should say the man whose empty chest measured the same as his girth round the umbilicus, or its neighbourhood, had already passed beyond the realm of healthy lives. I should suspect he was too fat, and that he required the special attention I have tried to indicate in what I have said with regard to obesity. Then there are some remarks by Dr. Crosby, which were, in substance, also made by others, and which I shall refer to in a minute. I think, Sir, that your remarks with regard to what Dr. Glover Lyon so well said, concerning the three factors in the origin of tuberculosis, are very well worthy of our attention, and are very suggestive. Of course, we all have our different views as to how these three factors work out. I shall have something more to say about that before I sit down. Dr. Glover Lyon said, in speaking of infection, that one would never dream of rating up a man at the age of sixty who was unvaccinated, because he might have small-pox in his old days. Why not? Small-pox does not respect old age any more than it respects sex.

Dr. Glover Lyon: It is very uncommon for an old man to have it.

Dr. Heron: No, I think not. Subject to those who may know better, I think it has been laid down, over and over again, and it is true, as far as I know, that small-pox does not respect age. He says also, there are certain men who are born much more liable than others to comsumption, and those men, as a rule, can be "spotted, as it were, by a good medical examiner." Then I must confess I am not a good medical examiner. I presume Dr. Glover Lyon was referring to the men I had in view, robust men of fine physique. I cannot, when I see two men of robust physique, say whether one of

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them is, or is not, born much more liable than the other to fall a victim to the infection of consumption.

Dr. Glover Lyon: I am sorry to interrupt again, but I did not mean that at all. I did not mean that really in robust men you could tell whether they were liable to consumption. I meant that there would always be some weakness and some sign by which the man might be described as a weakling.

Dr. Heron: That is in the paper. We are all agreed about the weakling. Dr. Davies criticises my definition of a healthy life. If he will refer to my paper he will see why I defined a healthy life in the way I did. I wanted an unanimous acceptance of a definition. It is impossible to get an unanimous acceptance of a definition in most matters medical, from an audience of twenty or more medical men, and I wanted to give a definition which each one of us could hold up before himself, and feel satisfied that it was a really good definition. The test being the life that he would himself place in the first class, I did not think that anyone could have found fault with that definition. My own definition, since Dr. Davies asks me for it, is exactly that. My ideal of a first class life is an applicant whom I would myself place in the first class. With regard to what Dr. Theodore Williams called "the burning question of tuberculosis," I would remark, first of all, that I think the speakers have, for the most part, overlooked the point that I wished particularly to press upon the Society. I wanted a definite answer, if I could get it, to a very simple question. If you saw a robust man, a man you would place in the first class, and you found he had a history of tubercle in his family, would you, or would you not, rate him up? It is a very remarkable thing, but hardly anyone of the speakers has definitely answered this question. By inference we can deduce the view each speaker took. Perhaps Dr. Hingston Fox was the only one who said definitely that he should follow the rule of rating up. I should have very much liked to have heard what each speaker thought on this subject. It is a new departure in life assurance work, if it is going to be taken up at all;

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and I have a notion, from the trend of thought in the present day, and the wide-spread conversion of the medical profession at large, and of many of the public, to views that are not in favour of regarding tuberculosis as an hereditary disease in the same sense as the phrase is used by Dr. Williams and Dr. Pollock, that very soon the man who is robust will be looked upon—and I think rightly looked upon—as a man who is entitled, if he propose himself for life insurance, to be accepted at ordinary rates.

Dr. Williams: Dr. Pollock has answered your question, I think you will find.

Dr. Heron: Yes, I should like Dr. Pollock, had he been here to-night, to have said whether he is still of that opinion, or whether he is, in any way, disposed to modify it. Several remarks have been made by Dr. Theodore Williams, Dr. Pollock, and other speakers, about heredity in a way which, I must confess, suggests to my mind that we are not speaking about quite the same thing when we use that term. For instance, Dr. Pollock says that there is no doubt whatever, from clinical evidence, that consumption is, in a large number of cases, hereditary—a transmitted disease. Well, if it is a transmitted disease, it would be a strange thing for us to acknowledge, as a fact on record, that only in two instances has the human fœtus hitherto been found infected with tuberculosis. If that is so, it seems to me to settle the point, and make it absolutely out of the question that tuberculosis can be transmitted, in any proper sense of that word, to the descendant of a human being.

Then Dr. Pollock also says in speaking of this matter, and I think, Dr. Theodore Williams says much the same thing, that the heredity of tuberculosis is a fact established beyond doubt by clinical evidence. Well, I venture to question that altogether, and I think it is very germain to this subject. Therefore, if the Society will bear with me for a minute, I will say a word from that point of view. What clinical evidence has established is that there are frequent occurrences of tuberculosis in families. What is assumed is that this proves these families to have a special tendency to

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tuberculosis. I contend it is a more reasonable thing to say, that these families are illustrations of the fact that tuberculosis is an infective disease, and that it passes from one to the other in the usual way of infections. If that view, that heredity is the cause of tuberculosis, in the sense in which Dr. Williams and Dr. Pollock used that phrase; if that be so, we set up for tuberculosis a peculiarity which we find in no other infective disease. I do not know it would be true to say of any other disease that it runs in families, in the same way in which it is said tuberculosis runs in families. Why should one infective disease have a peculiar characteristic of this kind, and no other infective diseases possess a like characteristic? That is what occurs to me as a matter which ought to be explained by those who hold the views that Dr. Theodore Williams and Dr. Pollock have put forward in this connection. If six men of a family are scattered abroad in various parts of the world, and all die of typhus fever, or of cholera, or diphtheria, nobody suggests for a moment that these men come of families with an hereditary tendency to these diseases! Everybody says they came within the grip of the infection, and, having said that, it occurs to no one to suggest as essential the theory of hereditary tendency to these diseases. Practically every human being is susceptible to the infection of tuberculosis. For generations and centuries, men, women and children have acquired this disease, and, to my mind, this proves that the whole race is liable to the infection of tuberculosis. And if you turn to the laboratory you will find that when you can prove that one of a family of animals, the guinea-pig for instance, is susceptible to tuberculosis, and that a dozen other guinea-pigs are susceptible to it, you practically establish the fact that all guinea-pigs are susceptible to that infection. So, in like manner, is it with mankind. There is one thing I should like to say in this connexion, a thing which is, I think, of very great importance, and it is that this theory of heredity was a few years ago, looked upon in connection with tuberculosis in cattle as being just as clearly defined, and of as much importance, as the hereditary tendency is now regarded by Dr. Pollock and others in its relation to human tuberculosis. Now what is the view of this question held

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to-day? You find that breeders of cattle all over the world, who have tried the use of tuberculin utterly disregard all theories concerning heredity. They have no working belief in them whatever, because they know that if they remove the tuberculous animals from the herd, the remainder of the herd will remain healthy, provided they are kept in proper sanitary surroundings. Not long ago Mr. Bates, the well-known breeder of cattle, made a very remarkable statement. He said that he had had large experience in the breeding of cattle, and had had large experience lately in the use of tuberculin among tuberculous cattle. He said he possessed a herd, and he knew of herds, that were looked upon as so eaten up with hereditary tendencies to tuberculosis, that it had been said of them by veterinary authorities, that there was not a single non-tuberculous cow amongst the herds, such was the extent of the hereditary tendency in those herds according to the veterinary authorities. These animals were submitted to the test of tuberculin, and the diseased animals removed, and tuberculosis has absolutely disappeared from amongst these animals, which were supposed to be overwhelmed by the hereditary tendency. Well, gentlemen, different views are held by different people, but these are facts which seem to me to speak much more loudly than any statistics, for behind the statistics lies the fallacy mentioned in my paper, and also the fallacy, or what I ventured to regard as a fallacy, the assumption, because it is nothing more—it is not an established fact, as Dr. Pollock believes it is—the assumption, that the inherited tendency is the explanation of family phthisis.

The reason why I did not discuss syphilis was because we had a very long paper and a long discussion on the subject a little while ago, and we all stated our views so clearly that I thought it unnecessary to include that subject in this paper. As to what Sir Hugh Beevor said, I am not aware that women who tend to stoutness should be more leniently judged than men who have that weakness. I shall look the point up. What Dr. Poore said about the annual summary of the Registrar-General is another very interesting fact, and tends to show, what is well known, that where you have the greatest density of population, there you have the greatest amount

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of tuberculosis, and that the opposite of this is also true. How Dr. Williams, Dr. Pollock, and others reconcile that fact with hereditary tendency passes my understanding.

Dr. Williams: Really, Sir, I am sorry to interrupt, but I think Dr. Heron has not obtained the correct view of Dr. Pollock or of myself. I cannot speak for Dr. Pollock, but all through what I pointed out was that heredity consisted in rendering individuals much more liable than others. It was vulnerability and nothing else. I did not say anything about the transmission in the case of the fœtus or the tubercle being found in the fœtus. I said where the parents and so forth had had consumption the offspring were more liable to consumption than others, and not only that but by clear facts they were shown to acquire consumption if they acquired it at all, at an earlier age than those who had not had the hereditary tendency—and that I proved by figures over and over again.

Dr. Heron: With regard to small-pox, Dr. Poore spoke about small-pox and vaccination. Of course we can only say, when an epidemic of small-pox comes, we shall then know whether the offices are right which charge more, or are wrong. I think the safe plan is for them to charge a little more.

I think Dr. Hingston Fox's suggestion for a change in the title of my paper—instead of "Extra Ratings for Healthy Lives," "Extra Ratings of Lives Free from Disease"—is what I should call a fearful distinction! I cannot follow it because I think it means exactly what I had in my mind when I wrote the paper. I am much obliged for his remarks about deafness. What he said is quite correct, and it ought to have been alluded to in the paper, only it was necessary to leave out something. Then, Sir, with regard to what you said and the lesson taught by the family who had gone to the mountains in Silesia, two of whom had died of tuberculosis, one at college and one in this country, I would only remark that I have spoken of weaklings in the paper. When a man reduces himself to the level of a weakling he ceases to be a robust man, and comes under another heading altogether. I quite agree, and I fancy

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we all agree, that men whose health falls below par are men who are most susceptible to the infection of tuberculosis, or of any other disease, no matter whether they have an hereditary tendency to it or not.

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EXTRA RATING OF UNHEALTHY LIVES,

By **E. SYMES THOMPSON**, M.D., F.R.C.P.,

Physician to the Equity and Law Life Assurance Society, and Consulting Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

Read before the Life Assurance Medical Officers' Association, March 1st, 1899.

Dr. T. Glover Lyon, *Vice-President, in the Chair.*

The success of Dr. Heron's paper on "Extra Rating of *Healthy Lives*" has led to the proposal that I should open a discussion on "Extra Rating of *Unhealthy Lives.*" I do not wish to trouble you with a formal paper, but rather to bring under notice a series of cases the consideration of which may prove to be of service, by tending to make definite and general information which is at present perhaps too indefinite and too much limited to a few.

Dr. Heron's paper travelled over a wide field, and my subject also is an extensive one.

Before my late father was appointed Physician to the old "Amicable" in 1855, it was customary for proposers to appear before the Board of Directors, and if they passed the scrutinising eyes of the Board they were accepted, the same rates being charged for all, irrespective of health and age. After a time, when medical officers began to multiply upon the earth, it became gradually recognised that variations of payment were fair and right, not only at different ages, but also under different health conditions.

The Clerical, Medical and General Life Assurance Society specially developed the assurance of invalid lives, a branch of Life Assurance which has proved safe and highly remunerative.

Other offices, even the most conservative, gradually adopted the same system. As time went on the Clerical and Medical, under the guidance of its half medical Board, proceeded to accept invalid lives with large additions, amounting at times to 20 or 30 or 40 years,

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and it is now maintained by some actuaries that "every case has its price and that all lives are insurable." This is, perhaps, too strong a statement, and probably no one of us would be prepared to pass a man at any ratings who was known to be of vicious or intemperate habits.

Year by year, with growing experience, the offices have learned to accept lives recognised as being seriously damaged, and the estimation of risk has been proved by experience to be sufficient for safety.

The increased risk of premature death due to the presence of definite diseases can be fairly estimated. The natural history of disease is known and the risk can be met by proportionate surcharges. To satisfy the actuary a sufficient number of cases of each class should be forthcoming for the due apportionment of the risks, but while the actuary can only deal with numbers the medical officer forms an estimate of the case before him, and is able to adjust fairly the extra rating. Take the cases of disease of the mitral valve, a sufficient number of cases of this kind are now insured in most offices to enable an average to be struck.

In the case of chronic lung disease this is more difficult. In asthma, in recurring bronchitis, in emphysema, the numbers are perhaps adequate, but cases of very chronic (fibroid) disease of the lung are not sufficiently numerous to form a class. They need not, however, on this account be necessarily excluded. Such cases can be differentiated from ordinary chronic, and slowly advancing, phthisis, and are as insurable as cases of mitral regurgitant disease.

Such cases as these, however, cannot safely be accepted upon the report of a medical referee, unless he happen to be one of those on whose opinions we have learned to place implicit reliance.

A man may be a master of diagnosis, and expert in prognosis, but unless he has that common sense bred of a long and special experience, it would not be safe to act on his recommendation.

The chief medical officer will do well, before accepting cases such as we are now considering, to see them himself, not necessarily because he is a better observer than others, but because his special experience will enable him to decide whether to accept

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or reject, to rate up much or little, and to put before the actuary and the directors the conditions of the proposed life, which would justify the acceptance or the refusal of the risk.

The simple acceptance or rejection of a life requires less consideration than the decision of the method of its acceptance. In theory the selection of the class and the adjustment of the premium is outside the province of the physician; but when a large extra is needed the physician must then consider, in concert with the actuary, how best to apply the necessary additional premium.

The addition of so many years to the life, which is the most practical and simple way of meeting extra risks, is not available in the class of unhealthy lives now under consideration, and a high percentage is at times rightly substituted for the addition of years to the life.

The system of *limited payments* seems specially suited for cases in which life expectancy is short, and the "Endowment Assurance" also meets the need.

There are many cases of impaired health in which a short 15-20 year endowment is exactly suitable,—the risk of early death being perhaps hardly greater than in a healthy life, though the prospects of "making old bones," to use an expressive slang term, is small.

The introduction of invalid lives into the Endowment class is of course likely to lessen the exceptionally favourable nature of the Endowment cases, yet this need not vitiate results, for in any calculations or tabular statements of claims the "invalid" cases might be eliminated.

Many cases of too insecure a kind to be rightly received on the Endowment, or ten years' payment system, may be recommended on the "single premium" plan. Of these I propose to give an example or two.

Sometimes an intermediate plan is proposed, *e.g.*, a Life or Endowment Policy paid up in, say, five years.

A recent claim of which I give particulars showed that this plan had been adjusted with such precision as to give both to the proposer and to the office exactly the right proportion of risk.

In another recent claim, loss to the office was prevented by the

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spontaneous payment of all claims before they became due, by a single payment at the end of three years.

Justly, to assess the amount of deterioration of a life must remain a matter of opinion and experience, but there is much knowledge, common to the profession, of prognosis in well-defined diseases which would justify a common ground of action, and it is in this direction that our Society is doing a most useful work.

In heart disease and in lung disease our knowledge is such as to justify accurate prognosis. Fortuitous risks are of course greater in damaged than in undamaged lives, yet these last being less sheltered than those known to be unsound, the fortuitous risks are perhaps not much greater in one case than in the other.

In cases of saccharine or albuminous urine, in cases of lithæmia, gout, etc., where the skilled analyst is our guide, modern methods of investigation give a greater precision than was formerly possible.

Some medical men show by their reports that they are too much the analyst and too little the clinical expert. Minute changes in urine, of no pathological bearing, are brought under notice, and unnecessarily perturb the actuary and the directors.

It may, however, in some cases, enable us to accept and rightly assess cases which would otherwise be rejected if we are in a position to employ an analytical expert to supplement the knowledge of the medical adviser.

I propose now to bring before you a few cases, selected as examples, some of which illustrate undue boldness in the acceptance of lives. In some of these the result has proved injurious to the office and in others advantageous.

In bringing them forward I anticipate the accusation of undue rashness, but would venture to maintain that where our knowledge of the case and its surroundings is adequate and sympathetic (as it is with our ordinary patients) we may, without undue risk, do what we should not regard as justifiable if the knowledge obtainable were less complete.

This leads me to quote the following observation from my article on Life Assurance in Clifford Allbutt's "System of Medicine." "Life Assurance should be an honourable transaction for mutual

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"advantage; any attempt to over-reach should not be passed over "lightly by either party. Directors are rightly severe in refusing "applicants proved to be tricky and secretive. When a proposer is "detected in making a false statement, it is right to decline to accept "him."

A recent illustration of this may be mentioned. A man desired to insure for £10,000, stating that he had never been declined. He mentioned, on enquiry, that he had withdrawn a proposal from an office in consequence of an unfavourable report made by one whom he had regarded as a friend, but who turned out to be an enemy. It was then ascertained that what had really happened was that the presence of albuminuria had been detected and that consequently he had withdrawn his proposal, and, further, that he had placed himself under medical supervision until the water had been found to be free from albumen, and all gouty symptoms were in abeyance. He then applied simultaneously to three offices and was, on the same morning, independently examined by their three medical officers.

Had he been open and above-board, the presence of variable, transient, dietetic albuminuria might have been explained and an extra rating arranged. The discovery of indirectness and lack of openness rightly led to the refusal of the proposal.

I would now proceed to deal somewhat in detail with a few selected cases to illustrate various forms of disease.

First as regards *Heart Disease.* The habit of accepting cases of mitral regurgitant disease in which there is no evidence of marked constitutional disturbance is becoming more and more general.

Lord B.'s proposal, which has recently become a claim, illustrates both the profitable and the unprofitable nature of such proposals. Lord B. was received by my office at a high rate for a limited term—10 per cent. for 10 years. About two years after, he was taken at 6 per cent. for life at other offices. The policy at the Equity and Law was then dropped. The doctor who examined the case for the other office had the advantage of knowing the state disclosed by our papers two years antecedently and could "sail nearer the wind!"

Ten per cent. for 10 years is about the normal premium for age

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The assurance must, however, during the 23 years of its course, have proved a highly profitable one to all the offices concerned.

I would next refer to a case of aortic regurgitant disease accepted at the recommendation of my predecessor, Dr. Markham, notwithstanding the refusal of Dr. Russell Reynolds to consider the proposal.

E. J. R., aged 22.

Seen in 1867 by Dr. Russell Reynolds, who writes:—"Had "rheumatic fever five years ago. Has aortic regurgitant disease "and hypertrophy of heart, a form of heart disease most fre- "quently productive of sudden death. Mr. R. may live to be 80, "but I do not think his life is insurable for a day."

Dr. Markham, in January, 1868, discovered the same conditions as those described by Dr. Russell Reynolds, but did not take the same gloomy view. He writes:—"It is six years since the rheu- "matic fever; that the heart could not have been very severely "damaged is proved by these facts:—

"1. That the physical signs do not evidence very altered structure.

"2. That he has had six years of good health, notwithstanding the altered state of the heart.

"3. That he is now able to take much exercise and has never suffered from ordinary signs of heart disease, viz., short breath, cough, pain in chest, etc.

"The great dread is a recurrence of rheumatism. I am inclined to recommend the case with 15 or 20 years addition."

Had been assured in 1866 at ordinary rates.

Father died of pleurisy, aged 50; mother living.

A slight diastolic murmur about mid-sternum; rather enlarged impulse.

Tall, thin, pale, active.

Accepted in January, 1868, with 20 years added.

He is still living, aged 52; at office age 72. (1899.)

This case illustrates the fact that 30 years ago the acceptance of a case of aortic regurgitant disease was not considered impossible if the addition to the rating were considerable.

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I would now ask your consideration to the acceptance of cases of established and well-defined diseases of the lung.

J. N., aged 55, Gas Engineer.

Height, 5-feet 9½-inches. Weight, 10-stone 12-lbs.

Chest circumference, 35-inches.

Father died, aged 60 } cause unknown.
Mother died, aged 57 }

Veins of arm dilated, veins dilated in region of diaphragm, depression of chest above xiphoid cartilage. Prominence of ribs at junction with 4th to 6th costal cartilage.

Resonance of chest at right apex impaired.

S. S. F. dull, expiration prolonged back and front.

Bronchophony and pectoriloquy, crackle in inter-scapular region right side.

History.

Refused insurance in 1857 owing to hæmoptysis. Repeated slight hæmorrhagic attacks; the last 2½ years ago; cough occasional. Rheumatic fever in 1854 and 1876.

Declined in 1878.

1888—accepted; 10 years added, 10 years Endowment Assurance, June, 1888.

1893—Dr. Harris (of Manchester), reported: "Impaired reson-"ance right apex, old mischief quiescent, passed period at which "extension of tubercular process commonly occurs, may be accepted "at ordinary rates." Recommended for life; 5 years added, 10 payments.

In 1895, Medical Attendant reports:—"Known him 16 years, "seldom ill, not robust, average life, lungs healthy.

"Weight 11-stone, healthy appearance, looks a hale old man. "Accept ordinary rates."

I recommended Endowment Assurance maturing at 77, ordinary rates, single premium, viz., £2000, securing £2200 with bonus addition. Of these three insurances of £2000 each, the *first* has already matured, *second* will be all paid in 1903, *third* was all paid by single premium. This last may be regarded more as an investment (at 4 per cent. compound interest) than as an assurance.

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Doubtless in this case the risk run has been considerable, but the ratings have proved to be more than sufficient. It must not, however, be forgotten that such cases are not common enough to form a class for statistical purposes.

I will now give a few particulars of another case, that of *P. L., aged 45.*

Medical Attendant's report :—" Since 1883, have attended him " for extensive consolidation of right lung. Until 1887-8, spent " winter and spring in Mentone, since then has been able to stay in " England. Since 1885, no signs of extension of disease or of active " mischief, free from constitutional symptoms, has gained weight and " strength. In 1890 caught cold, had cough and remained indoors " for three days."

In 1875 had fistula in ano, and mischief at apex of lung simultaneously. In 1883 symptoms returned.

One brother died of phthisis.

Father and mother lived to advanced age.

" Compensatory emphysema. Gets better as he gets older. " Now and then a little cough and expectoration.

" No fever or night sweats.

" Regular and careful, enjoys tricycle exercise, rather grey for " his age.

" An addition of 10 years might cover extra risk.

" Disease not progressive for years."

My report—" Lung has been seriously damaged by old disease, " although now arrested liable to be re-awakened under varying " conditions of Cambridge life and climate.

" Under ordinary circumstances I could not recommend the " case, but as we are in full possession of all the facts I am pre- " pared to recommend the acceptance of the proposal with 10 years " added."

Accepted with 10 years added, and 15 limited premia in 1891.

Now (1899) as well as ever.

John C., aged 55.

Endowment Assurance at 70. Five limited payments £5000.

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Woollen manufacturer—11 years ago, chest disease; sent to Riviera for two winters.

Height 5-feet 9½-inches, Weight 11-stone.

Right chest flattened below clavicle, increased vocal resonance right S.S.F., some emphysema covering cardiac area.

Appears to have had excavation and cicatrisation of right apex 10 years ago, arrest eight years. Active habits, careful liver, large business. Cured of phthisis, "accept ordinary rate for limited "period." (Dr. Rodger, Aberdeen).

Medical Attendant, Dr. Blaikie Smith.—"Phthisis 10 years ago. "Bronchial catarrh recent. Nephew phthisical, chest signs at apex "dormant for eight years—on recovery from influenza. Add 10 "years."

Suggested 15 years endowment paid up in seven years. On reconsideration advised 15 years endowment paid up in five years.

Died of cerebral disease and hemiplegia, aged 60 (November, 1898), after paying his five premiums.

During five years, he paid £5211. Profit £211 (exclusive of bonus). Total with bonus paid £5311.

A happy instance this in which the result was alike fair to the office and to the assured.

Temporary Extra Rating for Lung disease.

T. R. K., aged 29.

Accepted, ordinary rate, 1875.

After attack of inflammation of lung, which left some thickening at apex; accepted with five years added.

Accepted in February, 1899, at ordinary rates, aged 54; no signs of present evil in lung.

Extra Rating for Family Phthisis, 10 years, died aged 54, after 24 payments.

Captain G. P., aged 30, Adjutant, Volunteer Artillery.

Father died of consumption after operation for piles, aged 38.

Mother died in childbed, aged 35.

A sister died of consumption, aged 21.

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A brother died of liver disease, aged 29.

1878—accepted with 10 years added for family history by Dr. Cotton.

Height 5-feet 8¾-inches, Weight 13-stone 10-lbs.

Died of cirrhosis, ascites, syncope, aged 54 (office age 64).

Profit on £1600 assurance, £436.

I ought perhaps to apologise for introducing here financial details, but as our object is to learn whether the ratings have proved sufficient to cover loss, this way of stating results seems the simplest and most natural.

Let me now ask you to consider a few cases of *undue stoutness.*

As Sir Hugh Beevor rightly stated, undue stoutness in women is often less serious than in men.

Mrs. B., aged 58, Journalist.

Father died, aged 48, after accident.

Mother died, aged 69, rheumatic fever.

Height 5-feet 5-inches, Weight 15-stone.

Heart and lungs sound; no gout or phthisis. Takes no alcoholics. Tonsils large. Walks a great deal; never absent from office for 23 years.

Medical Attendant reports:—"From 30 years' acquaintance, "only ailments dyspepsia, catarrh, constipation; never really ill. "From her habits and good general health may be regarded as a "first-class life."

Accepted, notwithstanding stoutness, at ordinary rate.

Insured for £5000 in 1887, aged 58.

Died December, 1898, of interstitial nephritis and syncope.

Total premiums paid, £4680.

Loss (exclusive of bonus) £320.

An addition of three years would have turned this loss into considerable profit. Had she lived to pay another premium there would have been no loss.

Mrs. K., aged 36, Milliner, had typhoid fever and influenza.

Father died of phthisis, aged 36.

Mother died of disease of liver and bronchitis, aged 55.

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Height 5-feet 6-inches, Weight 14-stone. Very stout, but active.

Endowment Assurance payable at 55 (19 years).

Add 10 years, five limited payments.

William S., aged 42, teacher of Music.

Rheumatic fever four years ago. Rheumatic gout two years ago.

Height 5-feet 5-inches, Weight 14-stone.

"Pickwickian" figure, like his father and mother.

Weight unchanged for 24 years.

Recommended to be accepted at "ordinary rates."

Medical attendant considers no harm has been done by the rheumatism or gout; advises ordinary rates.

Accepted in 1889 with five years added.

Died of asthma, dilatation of heart and syncope, aged 51 (office age 56), in 1897, after eight years' assurance. Loss of £300 on a £500 policy.

Manifestly a quite inadequate extra rating for *stoutness and gout.*

Against this case I would set that of

Edward H., J.P., Cotton Spinner, aged 59.

Suffered from diabetes in 1885.

1898—wished to insure for £10,000 Endowment Assurance to mature at the age of 74.

Five premiums of £2000 each—

In 12 months the office would receive					-	£4,000.
,,	2 years	,,	,,	,,	-	£6,000.
,,	3 ,,	,,	,,	,,	-	£8,000.
,,	4 ,,	,,	,,	,,	-	£10,000.

or a single premium of £8750 for 15-year Endowment Assurance.

Declined.

Perhaps the extra rating proposed in this case may have been somewhat excessive.

Undue largeness, not of body but of head, is illustrated by the case of

E. K. H., J.P., aged 53.

Father died, aged 75; calculus.

Mother died, aged 72; paralysis.

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Two brothers died, aged 53, of peritonitis, and (aged 25) of phthisis.

One sister died of phthisis, aged 26.

One brother of weak intellect; another committed suicide.

Short, stout, 5-feet 3½-inches; a large prominent forehead.

Weight 10- or 11-stone.

Healthy; of nervous temperament.

Suffered from hydrocephalus in childhood. Headaches in boyhood.

For many years dyspeptic, for last 25 years better health.

Had fistula 25 years ago.

In June, 1872, Drs. Pitman, and L. Beale, and Dr. Fuller reported:—"We are of opinion that the acceptance of this life "would be attended with great risk. If the directors entertain the "proposal, an addition of not less than 15 years should be made, "the premiums to be paid within 10 years."

Mr. H. had water on the brain at birth. The disease was arrested. The fontanelles closed and he gradually advanced in education.

He was Mayor of N., very active, temperate. Three children.

Mother insane after puerperal fever.

Predisposition in family to phthisis and insanity.

Habits regular, high moral character, careful and judicious.

Head 16-inches from behind forward, 13¾-inches from ear to ear. Circumference round forehead 24-inches.

In October, 1880, further Assurance of £1000 at same rate.

The next case illustrates deformity with spinal curvature.

J. H. S., aged 46, Book-keeper.

Height 4-feet 9-inches.

Weight 7-stone 4-lbs.

Angular curvature of spine from infancy.

No illness.

Mother died, aged 67, cancer of throat.

Father died, aged 68, gouty. (?)

Accepted ordinary rates February, 1894.

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I was asked to insure "General Mite," the American Midget. Height 26-inches, Weight 9-lbs., age 20.

I attended him through an attack of acute pneumonia from which he made a good recovery.

It was desired to insure his life for £10,000, but the offices regarded the risk as too exceptional and too speculative, and would not entertain the proposal at any extra rating.

Some particulars of a case of chronic albuminuria call for consideration.

A gentleman, aged 49, applied in 1893 for Assurance. Albumen was known to have been present in the urine for 25 years. His proposal had been accepted by some and rejected by other offices.

Father died suddenly at 56.

Health always good. Albumen first found in the urine when examined for life assurance 25 years ago, and has always been present since.

Heart apex in nipple line. Brachial arteries pulsated slightly. Pulse of normal tension.

Urine clear sp. gr. 1025; with heat and nitric acid, dense white precipitate, which (on standing 24 hours) occupied one-third of the test tube.

In 1872, a considerable amount of albumen existed; in 1874, only slight amount of albumen; in 1876, a trace only; in 1887, a large amount, with hyaline casts; in 1887, amount small ($\frac{1}{40}$ only): in 1888, a trace; in 1892, a large amount.

Health good; active; hunts constantly.

I am not able to give the results in this case. I believe the proposer is still in good health.

My friend, Dr. F. Hawkins, now of Reading, reported this case to the Clinical Society in 1893, together with another in which albumen was known to have existed for 43 years.

I have not, as I had proposed to do, put before you a series of cases of glycosuria and albuminuria, but I find that already my communication tends to undue length.

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I had also collected half-a-dozen cases, selected as "bad claims," but find that the lessons to be drawn from them are neither novel nor convincing.

I would, however, express a hope, that means may be found for circulating among the medical profession the knowledge obtained from the study of claims, which is at present confined to the Chief Medical Officer.

I leave with you these sketchy illustrations in the hope that they may lead to a discussion of interest to ourselves, and of real value to the cause of Life Assurance which we all have at heart.

As medical science advances—as the natural history of disease is more accurately understood, and as prognosis becomes systematised—it will be acknowledged by the medical profession, by the actuaries, and by the directors of assurance societies, that even when it is impossible to look for a sufficient number of cases of any special form of disease, sufficient for a class and for statistics—it may yet be possible simply to insure individual cases of defined disease with confidence and success. The risks in such cases may be considerable, but not too grave to be covered by such extra ratings as here proposed.

The medical examination of lives is but half a century old. As the twentieth century begins, we may count on further developments. The publication of the mortality experience of the combined offices will afford a fair basis on which to build the practice of the future.

Discussion.

The Chairman: Before we go on to the discussion, I should like to say that I feel it a great privilege to preside over this meeting, especially when Dr. Symes Thompson, who has been a prominent member from the first, reads us so very practical and able a paper. It seems to me that this paper is landing us into new and very fruitful ground, because Dr. Symes Thompson proposes, in the

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first place, to extend the benefits of insurance to many who do not now enjoy it, and secondly, to increase very much the value of medical advice and work in the insurance world. I think these are the very two points which should come before the Association at a moment when we are joining hands with the actuaries and trying to work with them.

Sir Dyce Duckworth: I am very pleased to hear my friend Dr. Symes Thompson's paper, which is so full of matter, culled from a very wide and long experience of life assurance work. When all is said and done, I confess that the opinion I feel, and which I feel bound to express to you on these cases, is that even if we have abundance of statistics and a very large amount of personal experience, every case that comes before us to be weighed and considered is really a novelty, a personal equation in itself, and requires to be dealt with by our common sense, as well as by the light of our past experience. Of course on general questions, such as pulmonary phthisis and albuminuria, we have some fairly stereotyped ideas as to what we shall do when we meet with these conditions. Without doubt, the tendency nowadays is to insure cases which were formerly regarded as dangerous and uninsurable. I suppose all the offices, even the very best of them now, are disposed, perhaps under the stress of severe competition, but I should rather hope, by the encouragement they receive from the greater and progressive skill of their medical officers, to take on lives now, appropriately weighted, which perhaps 20 or 30 years ago they would have been shy of, or not have considered eligible at all. I think, speaking of Directors generally, the tendency is for them to be very cautious, and perhaps sometimes over-cautious. I think it happens that insurable lives are discarded from excessive caution. I do not know whether that is that the Directors have not all the confidence they might have in their medical advisers, or whether as practical men of the world and business men, with money at stake, they feel that they would rather be on the safe side. I think there must be every year a considerable number of lives which, if fairly weighted, are insurable, but which are lost to insurance business. I think Direc-

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tors are very much in the habit of adding to the weighting which their medical advisers put down. A difficulty, I think, always meets medical officers in weighting cases and giving opinions, if they be at the same time in practice as physicians. The views we form of patients who come to us complaining of their ailments are, I think, inclined to be, on the whole, more hopeful than the views we form of persons who come before us for the purpose of life assurance. And it may be that the more thoroughly we study a case, and the more we know about it, the more inclined we are to be hopeful, and to express as favourable an opinion as may be. But the names of certain diseases are bogies to Directors, and the fact of a person having a certain disease is enough to do for him, and to cause his chances to be given up by some Boards of Directors. With respect to the question of pulmonary consumption, I think that is a very large matter. Of course prognosis is very much improved now in respect of it. The same thing may be said in respect of albuminuria. And while on that subject I may refer to the lectures which are in progress of being delivered in this building by my colleague at the Law Life Office, Dr. Samuel West, who has brought a great amount of clinical skill and experience to bear upon the subject of albuminuria. And in the second lecture of his, which many of us perhaps have read, if we did not hear it, he has brought forward some very remarkable facts in relation to albuminuria and life assurance. The knowledge in that respect is gradually improving, widening out, and crystallizing, so that we may fairly hope in time a much better appraisement of cases will be made. I have no doubt we are much nearer a true knowledge of it than we were 20 years or even 15 years ago. With respect to heart disease, owing to the work done by Sir Andrew Clark and Professor Gairdner and others some years ago, our knowledge has become considerably enlarged and improved, so that we now think less gravely of the forms of heart disease if they be properly recognised and the patient's life properly managed; although even there the mention of heart disease is alarming to the average Director in an insurance office. I hope that the work of a Society like this, together with the general increase of medical knowledge, will add more to the ideas of the Directors of insurance

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offices, and help them, as a rule, to agree with the weighting which is given by their medical officers. I do not know what is the common experience of physicians to insurance offices, but I am not ashamed to say that, although I have been 30 years attached to different offices, I have constantly had the terms of appraisement which I have sent in added to by Directors. If I say five years they will often say seven; if I say seven they will say ten. I have taken that to mean that they are shrewd men of business, whose interests are much more at stake than mine, though if I put in the balance my conception of my own reputation against theirs or their speculation as to the issue in a given case, they ought to about balance each other. One perhaps ought not to feel a little snubbed by a body of gentlemen who have a special knowledge of life-assurance, who seek to better your opinions, but one takes it all in a long day's work, and one cannot do better than look at it in that way.

Dr. J. E. Pollock: The subject is so large and so diffuse that I do not know where to begin. We are introduced by the paper to a great number of affections which influence and modify the duration of life. Dr. Thompson recognises, as I think we all do, that the first duty of all medical advisers to Insurance Companies is to protect the Company. The second question is, how shall we protect them? How shall we advise so that as regards the money payments the risk may be duly appreciated? We must legislate for various flaws of health, £5 for that, 5 years for this, ten per cent. for another. Also having the whole history and the state of the individual before us, we are able to say in some cases that by five payments, *i.e.* within five years, the Company should have all the money; in others we can say "this is a case which may last twenty years, and we can have an arrangement as regards time for payment, always remembering that we are the protectors of the Company." I cannot see that there is any hard and fast rule in the matter, nor can we say that chronic mitral disease will be able to bear such and such an addition for so many years. Then there is chronic albuminuria of which all of us have had so many examples. I shall see a case to-morrow which is of twenty-five years duration, the

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subject being apparently a healthy person. We cannot exactly assign its value, but we may from long personal experience, get near it. This brings me to the point of what I have to say: that after all it resolves itself critically into actual personal experience and clinical knowledge and good sense and judgment of the individual to whom the case is referred. We all feel this, and there is the responsibility, but we have no distinct rules to go by. If you were to ask me, for instance, which form of heart disease is the least fatal and likely to allow the subject to live the longest I should say, as perhaps you would, mitral regurgitant disease, because we find in practice there are many cases which are compensated by hypertrophy of the ventricle, and there are therefore no symptoms. If we were asked to go to the other end of the pole and say what form of heart disease is the most dangerous, I should say aortic regurgitation. But even beyond that, in point of danger, is the weak, disintegrated, failing heart, which may break down at any time. From our practice we have become able to discriminate those cases, and therefore it brings me back to what I started with, that we must depend on the individual sagacity and judgment and clinical experience of the examiner; we cannot make a hard and fast rule. The question of the various methods of compensating risks is very important. Regarding a proposer at twenty-five with a marked family history of phthisis, to accept such a subject as an endowment at forty-five does not do justice to the Company, because those are the very years during which his danger will occur. Early endowment does not compensate, in my opinion, for a family history of phthisis the proposer being about twenty or thirty. What would compensate for it? We find a large, robust fellow, with a good chest, healthy colour, muscular, leading an active and temperate life, although with a family predisposition to phthisis, and we may safely say there is a man who is likely to last ten years. Then you must make all the payments in ten years; we cover the risk to the Company by having a number of payments made within a definite and short time. But in such cases I do not like the early endowment form. I do not think it meets the case of phthisis, but it may meet the case of gout, because gout occurs late in life, and phthisis

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early. We have to consider that there are different forms of payment, as Dr. Thompson has rightly pointed out, which meet different cases; but I am afraid that we have no kind of fixed rules for any cases of diseased lives, but that we must refer back to our own experience. I think those of large experience, such as Dr. Symes Thompson, and others who are here, will have no difficulty in fairly appreciating the risks. Before I sit down, I would like to remark that we English people are peculiar for our method. In France, and also, I understand, all over the Continent, none but first-class lives are accepted. One of my offices does a great deal of foreign business, and there is never any addition made to the rate for anything; they will have either to take it or leave it. They say, "Here is a proposal for £5000; we retain £2000. According to the medical evidence there may be occasional albuminuria, or a murmur, ascribed to anæmia or to mitral trouble, will you have it?" That leads me to mention something which I have stated to the Council this evening, namely, that they are about to hold a Congress of Life Assurance Officers at Brussels, and it is possible they may assimilate their methods to our more perfect rules. No doubt every life is insurable; I believe every life is if you knew how to appraise its value. Even with a cavity at the apex of either lung, with all its danger of hæmorrhage and pneumothorax and extension of the disease, a life is insurable. But we have not got the data to determine the value of such a life, and our experience tells us nothing, and therefore we had better put it aside and save the risk to the Company by not having it at all. But I believe if we had sufficient knowledge we could insure everything that comes before us.

Dr. Francis Hawkins: I am obliged to you for the honour of allowing me to speak at this meeting. I was very pleased to hear from Dr. Symes Thompson to-night that the patient is still living and paying to the office, because it is the only case of phthisis I have seen which I felt I would like to insure. That case was insured entirely at my suggestion. I was asked to go before the directors, who at first did not at all wish to take the case. I was asked by one if I would guarantee the life for ten years; I said "No." I was then

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asked if I would guarantee it for five years; I answered "Yes." I was asked if I would guarantee it for seven years, and I said "Yes," but I would not go further. My reason for doing so was that the physical signs which Dr. Thompson read out were my recorded facts—that the cavity he had seemed to be so localised, and that, although the man had had frequent attacks of hæmoptysis, he had recently been through some severe work at canvassing in Manchester, for the political meetings, during which time he had not had a single rise of temperature, nor any hæmoptysis. I am very pleased to say the Directors did take the life; first for six years. He was persistently refused for 20 years, because he had had hæmoptysis. The other case mentioned—of chronic albuminaria—was also one which I urged the Directors to take, but they would not do it. This gentleman's life I have followed up ever since the year 1893. He had been refused persistently for 25 years. I know Dr. Bristowe refused him, and another doctor refused him, but I urged them to take him. The day before I saw him he had been hunting the whole day—he was Master of Hounds—and this was followed by a champagne dinner. When he had had champagne dinners, he always passed large quantities of albumen, but very little at other times. At all events, he was one of those thin, wiry men, who seemed as if he would live to about the same age as his father, who died suddenly of hæmorrhage at about 60. I had in my mind that perhaps it was a case of cirrhosis; and I think Dr. Bristowe made that suggestion. I am anxiously looking up this gentleman's career. It may be interesting to tell you that in October, 1896, he fell from his horse and fractured his collar-bone. That has united, and he is still hunting his hounds this year. Therefore, if the office had taken him, as I suggested, they would have been the gainers, and probably he would have been very pleased with the Company. There was another instance, which Dr. Thompson has not mentioned. It was a case of congenitally defective heart, which I passed in his absence, and it is very much on my mind. He was an officer, and was passed into the Army on the recommendation of Sir William Gull and Sir William Jenner. He had been declined by the medical officers of the Army, but on these recommendations of Sir William

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Gull and Sir William Jenner he was passed. He had congenital pulmonary stenosis, not very marked, and I thought I would recommend him, and I did so, and he was accepted. Since then, I have watched his career. He has been through the Tirah campaign, he was in the Soudan, and he is still perfectly well, and has been through all his work. I am afraid to look at the list of deaths in the paper, for fear I should see his name there. That must be nearly ten years ago, and I am sincerely hoping that the end will not be yet, and that the Equity and Law will not call me to account. Whenever I see his name in the paper, I am always extremely interested. I was going to criticize Dr. Thompson, when he hinted that it was only those who saw a good deal of disease who were fit to pass these cases, but I may be excused if I say, from critical observation, that I have come to the conclusion that there is a good deal in that, and that if the offices had a local man who was attached to hospitals, it would perhaps be to their interest. But one can hardly realise the difficulty there is, sometimes, in examining lives locally, where, perhaps, the examiner is more or less interested. A case not long since was sent to me from one of the offices in London, and a letter at the same time saying that if I accepted the offer, they would be pleased to make me their referee. This gentleman was 19 years of age, had ridden a bicycle, and came to my house rather warm. His history was that his father had had hæmoptysis, his grandmother had died of consumption, and his mother I knew, from what I had heard, to be suffering from heart disease. When I saw this youth, his hands were blue round about the nails, and his chest would not expand as I should have liked it to under the left clavicle. As far as I could judge, he had "cog-wheel respiration." He was seeking one of these endowment insurances. It was pressed upon me to take him, as there was no risk. However, I feel that when I examine a case I am not doing so from any personal interest, but simply deciding as far as my judgment would allow me, in the interests of the office; I am the servant of the office and not of anybody else. I advised that this young man's insurance should be deferred. The people were very much annoyed. They took him off to a set of doctors in

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partnership, who signed a sort of round robin, stating that he was perfectly healthy and should be insured. He came eventually to London, I believe. However, he was accepted by a London office. But I mention that because, when the facts came to my knowledge, I wrote to the office requesting them to immediately remove my name from their list of referees, as I should not examine for them, as they had referred the case to me, and it would have been only courteous to refer it back to me.

Dr. C. Theodore Williams: I am very much pleased to hear Dr. Symes Thompson's paper, but it is a paper which will not evoke many remarks from me, because unfortunately I really cannot make up my mind on a great many of the points he has brought up for consideration. They are most instructive cases, and make one think of other cases, but to come to definite conclusions on several of those points is very difficult indeed. And here I may mention that it occurred to me as Dr. Pollock was speaking that, as he has said, we must depend on long experience, judgment, and tact on the part of the Medical Advisers to settle whether a case should be taken at all, and how much should be put on. But, I think, you should add another thing, namely, the humour of the Medical Adviser and particularly his temperament. If he is of a mercurial temperament, he is likely to take a hopeful view, where other medical advisers would take a serious one. There are certain cases about which one comes to a conclusion with tolerable speed, namely heart cases. The longer one lives the easier a decision in a heart case is. I will not go into the subject now, because I have inflicted two papers on heart disease on the Association. But there is one point on which I differ from Dr. Symes Thompson, namely, when he puts into the same category a case of mitral regurgitant disease and one of chronic lung disease. I consider them in quite different categories, and that they should never be classed together. Chronic lung disease is a much more uncertain element than heart disease. With regard to the cases of chronic tuberculosis which we hear about, I have been trying to accept these cases. I believe I have published some of the most favourable cases, from my father's and

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my own experience, selected from the upper classes, but as the result of my labours I never take a case of phthisis if I can possibly help it, and if I do I make the charges almost prohibitive. The reason is that you can never be certain of their future. Everything may look well, and you may think you know the limit of the disease, but something happens, the man gets under depressing circumstances, has a terrible domestic loss, or loses his money, or over works, or contracts some other disease, and the condition of the man is entirely changed—he has hæmoptysis, and the case is no longer insurable. And although Dr. Pollock has told us that we are all insurable, from the highest to the lowest, and with all sorts of disease, I could never fathom that statement. Albuminuria is another on my prohibited list. If there is albumen in the urine, and as long as there is any, I will not accept the life at any price whatever. So that though I have been studying insurance for a long time there are certain features that I cannot come to a favourable conclusion on, though I have tried to do so.

Sir Hugh Beevor: There are only a very few remarks I would like to make about one of Dr. Thompson's cases, and that is the H. case. It was a case of great interest to the insurance world. It went through the Law Courts, and eventually went to the House of Lords. That was in 1872, at the time when three medical men in London took him at 15 years and an extra, I believe. In the course of the evidence in the Law Courts it came out that the local medical officers held a very much better opinion than did the London men. There is no doubt that this man, with a large hydrocephalic head, is now alive and healthy at the age of 75. So it happens that the local opinion was good against the professional opinion of London. In this rare case of a big hydrocephalic head coming before us for insurance, there is another interesting point which is not mentioned in Dr. Symes Thompson's report of his previous history. He took an enormous amount of calomel. It was something like 10 or 15 grains a day, which he kept up for years. It was not until 15 years after the insurance was effected that his doctor got him to give it up because he was suffering from mercurial poisoning.

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Dr. C. W. Chapman: I was about to ask a question respecting a class of case which I have met with now and then, and which has interested me very much. Lives have been condemned, or loaded up a few years, and some time after have come for further insurance to another office, when they have been found healthy. What rule should be followed there? I had the case of a solicitor at 24, who, some three years previously had been insured for about £500 and he had two years added because he had tortuous arteries. When I examined him there were no tortuous arteries whatever. He was perfectly healthy. I cannot see what was the use of putting two years on to him, because if there was anything wrong with him more than that should have been added. This account of tortuous arteries was obtained after my report had gone in, and it was on that account referred back to me. I again said he was perfectly healthy. But still the Directors did not like the case. I was acting for the chief medical officer, and when he came back he saw the case, and he was ultimately passed at ordinary rates. I had another case, where a man was charged extra for a mitral murmur. This was four years ago. I found he had got no mitral murmur whatever. I recommended him at first-class rates, and again, with a little difficulty, he was passed by the chief officer. We know the disastrous results of giving a dog a bad name, and I should like to know how far we should let a previously recorded flaw bias our opinion when, on personal examination, we find the subject is healthy.

Dr. C. E. Hoar: I am sorry to impose on you at this very late period of the evening, but one was very appalled at the very bad cases Dr. Symes Thompson has brought forward, but pleased at the way in which they came out. In regard to aortic regurgitation I think the case seems to have been not a very bad one if the regurgitant murmur was limited to the right side of the chest—the right costal cartilage. Perhaps such cases might ordinarily be passed, but I should be very shy at doing so. But I cannot help posing before you as an individual who has gone in for a good deal of examination on my vile person. Twenty-five years ago they put me

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on 10 years at my office for a life policy. I had lung trouble. I had been to Mentone for two or three months, but it did not do me any good; in fact I got worse. I then took a voyage round the world. I have worked hard during the last 25 years: I don't suppose many men in the country have done harder work. Five years after that a London office took me at seven years extra, and my own office took me five years later at an addition of five years. I think the offices have done very well by me. I was able to alter one of my life policies for an endowment policy, otherwise I think the offices would have got all the best of it. Thus, 25 years ago my chest seemed doubtful, yet I do not think I had all the physical signs described by Dr. Symes Thompson, and I do not think I have many of them now. But if I should come forward again some day I hope you would all pass me as as an ordinary life.

Dr. Symes Thompson, in reply said: I will not keep you more than a few moments. Referring to the Chairman's remarks as to the relations between the Actuary and the Medical Officer becoming closer and closer, I think we may rejoice that such is the case; and it is on the mutual understanding between actuary and medical officer that progress will be made. With Sir Dyce Duckworth, who was kind enough to make some remarks, I agree: that what we have to decide is the personal equation of the individual before us; we cannot classify. Some actuaries used to imagine that we tabulated our cases, and put a name at the end, and that all we had to do was to give a name to the disease. But our work is very different. It is in the estimation we form of the individual before us that we can best do our work. There is this difference between private practice and insurance work—that when we see our patients we give the patient the benefit of the doubt; when we see proposers for insurance we give the offices the benefit of the doubt.

As regards what Dr. Pollock was kind enough to say, that we are called upon to protect the Company, I expected to be attacked for the undue rashness with which some of these cases were accepted; but some of the older ones were accepted before I came into office. My relations with the Equity and Law have extended

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over 28 years, but my experience of Life Assurance work has been nearly 40 years, as it was in 1860 that I was appointed to my first office. What Dr. Pollock said about the French offices was very interesting. I believe they still refrain from taking invalid lives; they act as the "London Life" acted until a short time ago. They managed to pass a few cases which were really very unsound and imperfect, but they like to regard them as fairly average lives. They were not able, in accordance with the terms of their charter, to accept any but first-class lives, and they had fixed rates. I am glad to see Dr. Francis Hawkins here, and to hear what he says, not only about that remarkable case of albuminous urine in 1863, but also with regard to the case of N., which has become rather a classical case. I am still prepared to maintain that we may regard many cases of fibrous phthisis in much the same way as we regard mitral cases; in both there are traces of the old disease which will probably tend to shorten life, but when people get to 50 or 60 years of age, I do not think there is very much danger of the development of acute phases of illness. There is a general deterioration which shortens life, but not nearly the same danger as in ordinary cases of phthisis.

As regards the point of Sir Hugh Beevor's remarks in connection with the case of H., I had information about the calomel, but when I went over the masses of papers with a view of making a digest I did not happen to notice it, though when the case came before me years ago I had the fact under consideration. As to whether one office by declining a man, gives that man a bad name, I am afraid it does. I think we often find that a man has been rated up on the reputation he has of being a bad life at one office, and there is a great tendency to gregariousness on the part of the offices. That has in it the element of safety, because it happens sometimes that the subject is found to have some disease which at the first office was not noticed. I remember having the case of a man whom I could not accept on the ground of having a murmur—I think it was presystolic. I refused him. He had been accepted for £40,000 to £50,000 at several offices. But my office was up to the full amount, and we could not take any further risk on the

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life. The Actuary said, "Will you meet the Medical Officer of another office, to which we will transfer the amount?" I consented, and a few days afterwards the Medical Officer came to my house. He listened and listened, and then asked me to listen, but the murmur was not there. But fortunately, I had the presence of mind to say to the man, "Walk quickly up and down the room two or three times." He did so, his circulation was hastened, the murmur reappeared, and my reputation was saved!

I will not keep you longer. I am much obliged to those who have listened to me so attentively, and who have made observations. My object was to bring forward cases to help us to realise how far we could advance in the direction suggested. It was not my desire to press reckless action on my brethren, but to consider how far we could go in this direction without recklessness.

The meeting then adjourned.

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THE RELATIONSHIP OF PROVINCIAL MEDICAL EXAMINERS TO THE OFFICIALS OF THE HEAD OFFICE.

By **THOMAS HARRIS**, M.D., F.R.C.P.;
Physician to the Royal Infirmary, Manchester.

Read before the Life Assurance Medical Officers' Association, July 5th, 1899.

SIR HERMANN WEBER, *President, in the Chair.*

It is a great pleasure to me to be present here to-night and to meet a number of gentlemen interested in the question of the medical examination of cases and the reporting on proposals for life insurance. I should like in the first place to say what a good work I believe this Association is doing, and I only regret that I cannot attend the meetings with regularity. It is impossible for medical men living in the provinces to come up to town very frequently, and I am, therefore, pleased that you publish full reports of the meetings, and send them to the members; I always read those reports with great care and interest. They have been a source not only of interest but of education to me, and I feel sure by publishing those reports you extend the usefulness of the Association in a manner which you could not otherwise do.

The subject which I have the privilege of bringing before you is a comparatively small one, but having thought the matter over for a considerable time, I think it is one of some importance. It is a subject which will need but a few words from me, and one which I shall try to put as tersely as possible, hoping by that means to leave ample time for the discussion of the subject, and to hear the views of the medical officers to the Head Offices, and those of the actuaries on the few points I propose to raise. My remarks will apply more especially to the relationship of the medical examiners

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in the larger towns to the officials of the Head Offices rather than to the relationship of the whole of provincial medical examiners to those officials. The cases which come from the smaller provincial towns are comparatively few, and the number of medical men suitable for insurance work is comparatively limited, whereas in the large provincial towns the number of proposals is a very considerable one and the choice of a medical officer is not very limited. The improvement in medical education and experience in large provincial hospitals has rendered the selection of a medical man capable of giving an intelligent and tactful report on an insurance case much wider.

I have for a long time been impressed by the want of connection between provincial medical examiners on the one hand, and the officials of the Head Office and the London physicians of the office on the other. In the large provincial towns frequently one medical man examines for several offices. That is the case with myself, and such being so, one has a varied experience of the customs and peculiarities of the various offices. One office is desirous, for instance, that a medical man should make a definite recommendation in the case of a risky life as to what number of years should be added. Another objects to any such recommendation and simply wants facts. Again, one London physician has strong opinions on the ineligibility of a risky life, whereas another London physician would accept such with an extra. You can readily understand, and I am sure some of you have had experience of the difficulties, which this leads to. If the London physician has no knowledge of the provincial one, and if the provincial one has no knowledge of the London one, as you will excuse me saying may occasionally happen, unnecessary difficulties may and do arise which, if the various individuals understood one another, would not occur.

An important point is the question of the appointment of provincial medical officers. Probably it will be news to many of you that a considerable number of good offices practically leave the appointment of the provincial medical officer to their local representative or branch manager, and I am examiner to several

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such offices and have never received any official confirmation of my appointment and have had no correspondence, except the forwarding of reports, with the Head Office. This appears to me a very unsatisfactory arrangement. A branch manager may give very good advice in reference to the capabilities of the various medical men in his district, but I think the appointment of the provincial medical examiner should be by the Head Office after consultation with the London physician. If this were invariably done, I think more suitable men would represent the insurance offices in the provinces than is at present the case. I fail to see, for instance, on what ground surgeons are so frequently chosen as insurance medical examiners. In one large provincial town, which I know very well, it is quite the exception for a consulting hospital surgeon not to hold an insurance appointment. It is true the majority of proposals for Life Assurance present no difficulties to the medical examiners, but the number of unhealthy lives which present themselves is considerable, and, with all due respect to my surgical *confrères*, I think a physician is more likely to do justice to the insurance company than a surgeon. Our surgical friends are very chary of the physician using the knife, or in any way adopting surgical procedures, and I think it would be only just if they attended to their own branch of the profession and left medical work alone.

Again, I question if it is advisable in the interests of the Head Office for so many medical men engaged in general practice to do the insurance work. There are exceptional cases where a medical man engaged in general work has devoted special attention to Life Assurance, and to such, of course, my remarks do not apply. Certainly, however, a large amount of the insurance work in the large towns of the provinces is conducted by the general practitioner who has not had the special experience referred to. In the smaller provincial towns such selection must frequently be a necessity, but in the larger provincial towns there is now no lack of men engaged in ordinary physician's work.

How is it that so many surgeons and general practitioners are appointed as examiners for Life Assurance in the large towns of the

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provinces? I believe the reason is because such appointments are chiefly made by the local agents of the insurance society, without previous consultation with the Head Office officials, or occasionally through the advice which such agents give to the authorities at the Head Office. I should not like to be unfair to branch managers of insurance offices. Many I know personally, and am fully assured of their fairness to the office they represent. Some are men of very high character and men whom we should all respect. But there are others of whom I cannot speak in the same terms. It is a great temptation to a local agent to appoint, or recommend for appointment, some medical man whom he knows socially, or of whom possibly he knows something medically, but whose qualifications for the important duties which he has to perform have not been carefully weighed. Further, we must also remember that the pressure of insurance business, the competition for business among the various offices in the provinces, is very keen, and if a local agent can get a general practitioner who will attend at his office to examine cases, work is very much facilitated, because a physician, who has any amount of practice, cannot attend regularly at the insurance office, and can only see cases at his private chambers. If, further, a medical man is very thorough in his insurance work, makes it a point of carefully examining every case and considering in his report, as I think he should do, that he is the servant of the Head Office and has to guard its interest, then his relation with a certain type of branch manager becomes a very difficult one, and things occasionally get a little strained. The refusal of a case means frequently the loss of commission to the local agent, and such an interested party is only too apt to look rather at the easy-going medical man than to the careful and painstaking one whose desire it is to safeguard in a reasonable manner the interests of the Head Office. This is no fairy picture I am drawing; I could relate instances bearing out what I have just said. You cannot serve two masters—you must either serve the local agent or the Head Office.

I therefore feel very strongly that the Head Offices should carefully guard themselves by themselves appointing their medical examiners and having the reports sent direct to the Head Office

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in all cases where they have no branch manager, but only agents, and also in those cases where they have a branch manager, unless they are perfectly satisfied that such an official is absolutely to be relied upon. An official intimation should be sent to the provincial medical examiner notifying him of his appointment and instructing him where the reports are to be sent to.

The forwarding of reports direct to the Head Office has certainly one objection. The branch manager may not know whether the proposer has presented himself for examination, and some days may elapse before he is aware what is likely to be the decision of the directors. Such a difficulty, however, might be partly got over by a communication from the medical examiner to the local agent, stating that Mr. So-and-So had presented himself for examination, and that the report had that day been sent to the Head Office, the officials of which would later communicate with their local agent. One must admit that the same remarks do not apply to branch managers as to local agents. Branch managers occupy a different position to an agent of an insurance company, and when an office has a perfectly reliable branch manager I see little objection to the medical report being sent to him. It is all a question of who is the branch manager. Many who occupy such positions are as much to be trusted as any official of the company, and if he is a reliable man and will not disclose any portion of the medical report, there are many reasons why a report should be sent to him. Such a course facilitates business. If, however, the branch manager is not perfectly trustworthy, there are frequently facts stated in a medical report, notably those relating to certain diseases from which the proposer may have suffered in early life, which are better only disclosed to the officials at the Head Office.

It also appears desirable that facilities should be afforded for the provincial medical examiner to become personally acquainted with the actuary of the office and with the London physician to the company. This I think might be easily accomplished if the authorities at the Head Office, when officially notifying a provincial medical man of his appointment, sent him a letter saying that when he came up to town they would be pleased if he would call upon

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the actuary, who could then introduce him to the physician representing the company in London. Such a communication appears to me desirable. It would be an indication to the medical man that his visit would be agreeable, and without such an invitation I can readily understand that some doctors would hesitate to call on the actuary even if it ever occurred to them that an interview was desirable. For my own part I have usually not waited for such an invitation, which possibly accounts for the fact that I never received one. I have usually called at the Head Office and made the acquaintance of the actuary, and frequently he has been anxious that I should meet the London physician, and an interview has been arranged in many instances.

In adopting this plan I have never had any unpleasant experiences. The Head Office officials have always received me with courtesy, and evidently appreciated the object of my visit. But I was a little amused the other day by the experience of a medical friend. I had frequently discussed Life Assurance with my friend, and had told him what I usually did in reference to making the acquaintance of the actuaries of the Head Office. He evidently thought it was the right thing to do, and, although a very quiet gentle unassuming man, he called when next in London on one of the offices for which he was doing work. But he was very much disgusted when the next sentence which followed the official's "How do you do, Dr. X.," was "Let me see, Dr. X., are you insured in our office?"

My friend felt very annoyed, and I am afraid will be chary about visiting another office unless specially requested to do so. My own relation with the officials at the Head Office when I have called has been of the most pleasant kind, and I simply cite the experience of a friend as showing that it is advisable that the provincial medical examiner should be invited to call on the officials of the Head Office, and that the matter should not be left to his—the doctor's—own initiative.

I believe, Sir, that, at a recent discussion at this Association, you expressed approval of arrangements whereby the relations between the actuary and the medical officer should become closer

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and closer, and I hope that you will approve of any practical suggestion whereby the provincial medical examiners are brought into closer relationship with the London physician and the actuary to any particular office.

I was interested in the recent paper before the Association by Dr. Symes Thompson and the discussion upon it. It is true, as was said in the course of that discussion, that the personal equation of the individual before us, which a medical man has to consider in reference to the eligibility or otherwise of the life, is of the greatest importance. But, unless the provincial medical examiner is known personally to the actuary and to the London physician to the company, the difficulties of the provincial examiner in reference to conveying his impressions of a particular life to the Head Office are very great. Further, although we may as medical examiners for Life Assurance be agreed upon the main points which govern our action in advising the acceptance or refusal of a proposal, there are many important points on which opinions differ among even skilled physicians, and it cannot be to the interest of the Head Office for the provincial examiner to express strongly one opinion and their London physician another.

I dare say that actuaries are no more desirous of trying to settle doctors' differences than are our patients.

The discussion at the last meeting of this Association clearly showed that a difference of opinion exists even among London physicians on the question of accepting unhealthy lives.

For instance, Dr. Symes Thompson regards a large number of damaged lives as insurable and, referring specially to certain chronic lung affections, other than cases of chronic slowly-advancing phthisis, says they are as insurable as cases of mitral regurgitant disease.

Dr. Pollock regarded every life as insurable, but said that, as we have not sufficient data to determine the value of a life where there is a cavity in the apex of a lung, we had better put it aside and save the risk to the company by not having it at all.

Dr. C. Theodore Williams, on the other hand, said:—"Although Dr. Pollock has told us that we are all insurable, from the highest

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to the lowest and with all sorts of disease, I could never fathom that statement. . . . . Albuminuria is on my prohibited list." If there is albumen in the urine, and as long as there is any, Dr. Williams said he would not accept the life at any price whatever.

I do not wish to criticise any of these opinions, but I could not help feeling, when reading the above remarks, that it would be a great help to a provincial medical examiner to know the views of these officials, if he was the provincial examiner to the office they represented in London. One could frame one's recommendations so much better and so much more satisfactorily, as it appears to me, if one knew the individual opinion of these physicians than would otherwise be the case if one had no knowledge, but unless one is personally acquainted with the officials to the London Office, or has an opportunity of obtaining their views through an Association like the present, it is impossible for a provincial medical examiner to know their opinions on the various points.

The difference in the requirements of the actuaries of the various offices is noteworthy. Some offices specially request the provincial examiner, in the case of a life that is not first-class, to express his opinion as to what number of years should be added to the life. Others in their reports leave one in doubt as to what they require on this point. One first-class office for which I examine a number of cases does so, and as I was in doubt I called upon the actuary and asked him in the case of an unhealthy life whether he wished me to make any recommendation as to the number of years to be added. The reply was a very definite one, and he said they simply wanted facts, and desired that their provincial medical men would not make any recommendation as to the number of years to be added. Merely from the medical report form I could not gather that they did not want the number of years stated. It is only by becoming acquainted personally with the various actuaries that one can get to know what they and their directors desire.

In conclusion, I desire to put forward three points for discussion, the reason for which I have attempted briefly to bring before you:—

(1) That it is advisable that the provincial medical examiners of insurance societies be appointed in all cases by the Head

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Office after consultation with their London physician.

(2) That the provincial medical examiner should receive intimation from the Head Office of his appointment, and be informed as to whether he is to send his reports direct to the Head Office or to the branch manager. That reports should never be sent to anyone who is only a local agent, and has not the management of a branch office.

(3) That facilities should be afforded for the provincial medical examiner, especially in the large towns, to become acquainted with the actuaries and the London medical advisers of the particular insurance office.

Discussion.

Mr. W. Hughes (*one of the Managers of the Prudential Assurance Company*): I should like, Sir, to have heard something from some of the members before attempting to address this assembly; but as I have been called upon, I will endeavour to say a word or two upon this subject, which interests me very much indeed, though I am afraid I shall not be able to add anything that is very useful to the discussion. My remarks must necessarily be somewhat desultory. I cannot pretend that I have not had a certain amount of experience in the matter, inasmuch as my Office receives as many as 60,000 reports from provincial medical men per annum. I cannot say that every one of these is examined either by myself or by Dr. Light, our medical officer. There are some reports which are, to use our technical expression, so absolutely "clean," that they pass through without further question. As Dr. Harris has said in the early part of his paper, a great number of persons who present themselves for insurance are so unquestionably first-class that no question of any sort can arise. It is a very comforting thing to think that so very large a proportion of the population are in such a good state of health. It is only with the cases which present

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some difficulty that any of these questions arise with regard to differences of opinion. Dr. Harris has referred to a divergence of practice on the part of the offices as to what is wanted from the provincial medical referee, some offices asking him to definitely state how many years he thinks should be added to the life, others asking simply for facts, leaving the treatment of those facts to the Chief Office. For my own part, I am of the latter opinion, and partly for the reason that I find the same facts, or similar facts, passing through different hands, will be accompanied by totally different recommendations. I have known cases in which the family history has been undoubtedly weak, and even the personal condition has not been perfect, and yet the medical examiner has reported that life as first-class. I have known similar cases in which, although the examiner has not reported the life as absolutely first-class, he has suggested that we should only add *one* year to the life; and I have known other cases in which ten years have been recommended on statement of facts which after careful scrutiny did not seem to bear out any such recommendation. Then there is the personal equation: one man is disposed to be severe; another man is disposed to look at everything in the most favourable way. I think that for practical purposes the best thing is to have as complete a statement of facts as can possibly be, with regard to the most minute particulars which are asked for in the medical report form, leaving the Head Office doctor or the directors to form their estimate as to what should be done with the proposal. Dr. Harris said it would probably be news to learn that some offices allow their agents in the country practically to appoint the medical referees. I know it is done in a few offices, but I think it is one of those things which cannot be too severely condemned. Our own practice is exactly in conformity with Dr. Harris's recommendations. Necessarily we cannot know all the doctors throughout the country, and we are dependent upon our principal officials in the districts, not the agents, but the superintendents of the chief provincial offices, for the nomination. They name a referee, but we have no hesitation whatever in rejecting that nomination and appointing somebody else if we see fit. The appointments are exclusively from the chief

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office, and exclusively territorial—by that I mean that when a doctor is once appointed it is beyond the power of the agents to take any proposer resident in his district to any other doctor on any pretence whatever. The large towns we divide into districts, and a man living on the east side of High Street must be examined by Dr. A., the doctor on the east side; a man who lives on the west side must be examined by Dr. B., the doctor on the west side of High Street, and on no pretence whatever can the man on the east side be taken to the west side doctor. Occasionally complications arise, the doctor having gone for his holiday or being away, and so on; then permission must be applied for to the chief office before the examination can be made by any doctor other than the one who is attached to that district. In many cases where an agent, in defiance or forgetfulness of rule, has taken the proposer to a doctor not appointed by the office, we make it our business to apply to the doctor who should have examined the proposer to know whether he knows anything about him, the idea being that the doctor should be absolutely independent of the agent and responsible entirely to the Chief Office. If you will forgive me speaking so much of our own practice, I may say that we also take care that the reports shall not be seen by anybody from the time they leave the doctor's hands to the time they arrive in the Chief Office. If our rules are observed—and we are careful to see that they are—no agent can know anything about the contents of a report or the recommendation that has been made. This not only serves its obvious purpose, but it makes things a great deal easier for the doctor himself, who, if he is asked by the patient what sort of a report he has given, can say, "I am precluded by the rules of the office from giving you any information on this point, whether good or bad." I entirely agree with Dr. Harris's remarks on the relations between the provincial referees and the Chief Office. I myself am delighted to see any of our provincial doctors who may happen to be in London. We do not actually invite the doctors when we appoint them, but it is a suggestion which I shall carefully consider as to whether our appointment forms shall not in future contain a direct invitation to every doctor, whenever he may happen to be in London, to call at

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the office and see myself or one of my colleagues. It has been a great pleasure to me to see the provincial doctors, and it has frequently been the means of clearing up misunderstandings. Some of these gentlemen are not clearly aware of what it is they are expected to do. As Dr. Harris has indicated, they sometimes are under the impression that they are to assist the district manager to get as much business as they can, and pass every proposer who is not actually in a serious condition of ill-health. I have been able to clear up some misapprehensions on this head, and those who are most valuable to our office are the medical officers whom I know personally and have had an opportunity of seeing. I am very pleased to have had the privilege of being here this evening to hear the very interesting paper which Dr. Harris has read to us.

Dr. Heron: I am sure Dr. Harris will feel that his paper has already served a very good purpose, in that it has drawn the attention of a man holding the very important position of the last speaker to certain important matters. While Dr. Harris was reading his paper I thought of the man who was married to an extremely sensible lady, who from the day of the wedding never differed from him, and who one day was surprised to hear him say, when she agreed with him most cordially about something, "For goodness' sake, contradict me just once, so that I may know there are two of us." My experience is so entirely on the lines proposed by Dr. Harris that I had almost echoed the remark of the long-suffering husband. The appointment of the medical men in my own office lies entirely in my own hands. When the office want a man appointed in any particular place they ask me to name a man, and I do so. I find there is a little difficulty about this. If one is asked to name a man in some place where there are, say, 40,000 people,—I believe the average is one doctor to about 800 or a thousand people in the provinces,—there are some 40 doctors, and it often happens that of all these 40 doctors one knows nothing. The plan I have adopted in that connection is to take a man who is a Fellow of my own college, the College of Physicians of London, and ask him

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to make the necessary local appointments in his own town. For instance, in Birmingham, Manchester, and so on, I pick out a man, known personally to myself, who holds a very good position, and I ask him to nominate good and trustworthy men in his own district. I quite agree with what Dr. Harris has said with regard to surgeons. I always oppose their appointment, and I cannot see why a surgeon should ever be appointed. I remember once being engaged with the representatives of two other offices, one being a surgeon, and the case we had to decide was what a certain condition of heart meant in connection with the assurance of a certain life for a very large sum of money. The surgeon stayed downstairs and read the paper, while the other two went upstairs and made the examination, and he assured us he would be perfectly satisfied with any conclusions we might arrive at. I do not know what the opinion of the directors of his office might have been had they known in what way this gentleman examined. I feel there ought to be exceedingly strong and very special reasons indeed, in order to justify the appointment of a surgeon to the position of medical officer to an assurance office.

I feel very strongly indeed on the point of the agents never having anything whatever to do with the appointment of the doctors, and I would even go so far as to say that superintendents of districts should not have anything to do with it either. I think the matter should rest entirely in the hands of the medical officer who is the adviser of the particular office. I am sorry to say that often medical men who are beginning practice are urged by agents to insure their lives, and, in order to enable them to do so with an easy conscience, they are told that all the business of the office in their district will be put into their hands. But the upshot of it is, that the payment of their own premiums as they fall due begins and ends their business with the office. That is a fact which is far too common, and is not to the credit of the offices.

Dr. de Havilland Hall: Some few weeks ago I was talking to one of the senior members of this Association, and he was complaining that our papers were hardly sufficiently practical. If he

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had been here to listen to Dr. Harris's exceedingly useful and suggestive paper I think he must have confessed that, at all events, we have to-night a practical paper, and one that intimately concerns our daily work. I think that we shall all agree to the suggestions made by Dr. Harris.

As regards my own office, the appointment of the medical officers is in the hands of myself and my colleague. Every appointment is first of all submitted to us. I do not say that we make them without any suggestions from outside. The names are laid before us, and if, for any reason, we object and think there is a better man, we are at perfect liberty to recommend him. In the case of the large towns, we have been carefully revising our list and selecting the best type of man we could for the onerous task of acting as local referee. We all have reports of cases sent up in which there is some doubt thrown upon the life. If the candidate lives near London we naturally say: "Come up to the Head Office for examination," but, supposing he is living in one of the big towns—Manchester, Birmingham, Bristol, &c.—it is considered desirable that we should have someone to appeal to in those towns, and therefore we have recently been considering the names of certain leading physicians to whom we can refer our doubtful cases. As regards the question of physician *versus* surgeon for Life Assurance appointments, I think there can be no sort of doubt in the matter. I myself represent the substitution of a physician for a surgeon. When I was appointed at the Rock it had been the custom since 1847 to have a physician and a surgeon. There came a vacancy, owing to the resignation of the surgeon, and the directors put it to the medical officer, Dr. Farre, whether he preferred a physician with a surgical qualification, or a surgeon with a medical qualification, and he said a physician with a surgical qualification, so I was chosen. There have been two elections since that time, and in each case a physician has been appointed.

Agents do grumble. The directors invite the leading inspectors and agents to dinner at the head office every two or three years, and I have had the opportunity of a talk with them, and they say there is sometimes a great difficulty in getting the applicants to go

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to the houses of the physicians at the appointed times, and that is a reason why they are so anxious, especially in small towns, to employ a general practitioner to make the examinations. All the medical examiners are appointed from the Head Office. They are notified of their appointment, and I believe, at the present time, each of the medical officers, on appointment, receives a reprint of a lecture I gave on Life Assurance some years ago, as embodying the views of the chief medical officer at the Head Office. Many of the examiners in the country have said it is convenient to have by them a guide as to the view likely to be taken by the chief medical officer of the reports sent up to him. We add at the bottom of our form the word "recommendation," and we expect our examiners in the country to make a recommendation. What we want them to say is whether the applicant is a first-class life or a life which should be taken with an addition or one which should be rejected. We do not expect that they should suggest the addition, and I do not think that it would be desirable. It seems to me that the question of an addition requires a man of large special experience in Life Assurance. A man who only occasionally examines for Life Assurance is hardly in a position to gauge the extra amount of risk involved. I certainly do think it would be an excellent plan if the leading examiners in the country towns, the large provincial towns, could come in contact with the actuary and the London medical officers.

Dr. C. Theodore Williams: I so thoroughly agree with the writer of this paper, and all the conclusions he has placed in his paper so fully carry out my own convictions, that I shall not detain you long by discussing them. As regards the question of examiners, when I was first appointed I was astonished, on looking down the list of medical officers of the insurance companies, to see such a large number of surgeons. I have noticed since that time, that the number of surgeons has diminished considerably. When appointed to my present office, more than 25 years ago, I was the physician, and another gentleman acted as surgeon. But although appointed as a surgeon, he had no special surgical qualification, he was a

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member of the Royal College of Physicians. When he resigned, they entrusted the whole of the work to me. I must say there have been times when I should liked to have had a surgical colleague; but we can always get a special opinion from some distinguished surgeon, either by referring the candidate to this surgeon, or by meeting him in consultation. In the country I think it would be desirable to always have a physician of very high standing, but there are many difficulties. The best men in the country have stated hours for consultation, and they are only to be found at these times, and consequently they are difficult of access. The agent persuades a candidate to insure and he wants to book him at once, and to go to a distinguished medical man's house and find him not at home does not suit the agent's purpose. I think it is necessary to have a certain number of medical referees who can be got at all times. For instance, in some of the West-end offices they are obliged to appoint a medical man in the City who has afternoon hours of consultation, not because he is the best man, but because he is accessible during the afternoon hours. With regard to the appointments of medical referees at my own office, I believe the appointments are practically in my hands. I have every now and then a list of names submitted to me, and I do the best I can. I certainly reject some and substitute other better names, but it is very difficult to be quite sure of getting good men. You cannot be expected to know men all over the country, and Dr. Heron's suggestion is a capital one, which I mean to follow, when in difficulty to take the advice of a Fellow or Member of the College of Physicians, resident in the neighbourhood.

Dr. Vivian Poore: I think it is almost impossible to lay down any hard and fast rule with regard to our course of conduct in some of the matters Dr. Harris has alluded to. There are doctors and doctors, and there are local agents and local agents, some good and some bad. I must say I attach a great deal of importance to local knowledge. Sometimes I am asked to recommend a doctor for a particular district, and if I do not know anybody personally I say: "Who is your agent there? Have you confidence in him?" I

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put that question, and if I hear he is a first-rate agent, I say: "Ask him to submit two or three names and let me choose one." I do not think there is any harm in trusting an agent to nominate two or three men, if the agent is a man of the right kind, and the people of the Head Office should know whether he is a trustworthy gentleman or not. Sometimes they say they would not ask him, and then I find some other way. With regard to the recommendations, I confess I cannot think any report is complete unless it contains a recommendation. You may be told what the family history is, the state of the heart, the state of the lungs, you can measure and weigh a man, but there is something more than that: there is the general impression left by the person on the examining doctor, and I always think that that general impression is a most important thing, and has got to be taken into consideration. Very often my manager will say to me: "Do not you think this gentleman has made a very unnecessary recommendation in advising an addition to this life which seems good?" and I always hesitate to answer. I say, "On paper, yes. I cannot pick any hole; but we must remember that he has seen him, and I have not." That is the point, and I am very much inclined to attach very great importance indeed to the recommendation of one who has seen the patient. Sometimes you get a good report, and sometimes you get a succession of reports which are obviously silly and ignorant, and then I say: "It will be better to change that gentleman, and get somebody else to examine the persons down there." There is experience and common sense, which come into play in Life Assurance work, perhaps more than they do in any other department of medicine. With regard to surgeons, I quite agree that an examiner for Life Assurance ought to be particularly trained in the examination of the internal organs and so forth, use of the stethoscope, and so on; but there comes in the question of experience. I have had in insurance work two very dear colleagues, both surgeons: one, the late Mr. Hancock, whom you knew, Sir, and my present colleague Mr. Kingdon. Two better men in the matter of Life Assurance I am quite sure never lived.

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Dr. Glover Lyon: I should like to thank Dr. Harris for taking the trouble to come up and give us his ideas as a provincial examiner. They are extremely valuable, and I agree with him on almost every point. I think that not nearly enough trouble is taken generally in appointing examiners. In America they require a testimonial from two medical men, and I think that would be a step in the right direction. I was asked the other day to name somebody as examiner in a provincial town, and I simply said that I could not be responsible for anyone, that if I was to answer that question properly I should have to go down to that town and inquire about the medical men there—as to their characters and so on.

Dr. Hector Mackenzie (*Hon. Sec.*) read the following remarks by Mr. Edward Browne (Manager of the Colonial Mutual Life Office), who wrote expressing his regret that he was unavoidably prevented from being present: "I am sure this subject is a most interesting one to Head Office officials. Great confidence should be shown all provincial medical examiners, and, as I invariably do myself, the manager should, when visiting his country branches and agencies, always make a point of calling upon the local examiner and discussing the practice of the office in dealing with cases. I have found this of great use, and it, if possible, seems more fully to secure the very best services of the examiners in the best interest of the office. Again, personal sympathy goes a long way, and coming into personal touch with the Head Office official or officials relieves the new business department of much correspondence and ensures complete appreciation of the many special points prominently brought before the Head Office medical officer, the directors, and manager.

"It has suggested itself to my mind more than once that your excellent Association, which already has done much good work, might, with much advantage to life offices generally, prepare a list of medical officers, available specially for life offices throughout the country. Say, two classes—1st, examiners who only conduct examinations at their own houses or consulting rooms; 2nd, those prepared to visit applicants at their houses or places of business.

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"The qualifications required could well be stipulated by your Association. Had I been present this evening, if permitted to say a few words regarding the paper to be read, I might have ventured to offer my suggestion regarding appointments."

Dr. Hector Mackenzie: I was very much gratified when I got an intimation from Dr. Harris that he would read a paper on this subject here. It is a matter of great importance to those of us who are the chief medical officers in London to get in touch with the provincial medical officers, with whose reports we have so much to do, and on whose judgment so much depends. From enquiries I have made and from personal experience of the methods of a number of offices, I know that there is a good deal of difference in the way in which provincial medical officers are appointed. In some offices, for instance, the chief medical officer is always consulted as to who is the best man to act for the office in any district where there happens to be a vacancy or where no medical examiner has been previously appointed. In other offices the appointment is made without any reference to the chief medical officer, and perhaps other considerations besides professional standing and ability influence the appointment. Certainly one finds a great difference in the standing of the medical officers for important companies in some of the large provincial centres. There ought to be not the slightest difficulty in getting, as medical examiners, leading physicians in towns like Manchester, Leeds, Liverpool, Newcastle, Birmingham, &c.; and in the smaller towns we should be able to obtain our reports from the best men that are available. I consider that it would be always to the advantage of an office that whenever an appointment is vacant, whether in a large or small town, the physician at the Head Office should be consulted as to the selection of the best man to fill up the vacancy.

I can corroborate what Dr. Heron has referred to—that an agent sometimes calls on a country doctor, asks him to insure his life, and tells him that if he takes out a policy he will obtain the appointment as medical examiner. I think, however, the country doctor is not often taken in by such a specious promise,

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and I cannot say that I know of any case where an appointment has actually been made because a doctor has insured his life with the office.

It would no doubt be a great advantage that both the actuary and the chief medical officer should have the opportunity of sometimes seeing the medical examiners of the larger provincial centres. I would point out that our Association in some measure affords such an opportunity for the London and provincial medical examiners to meet.

In the case of examiners in the smaller towns it is not so practicable, because the link of connection with any one office is often extremely slight. I am afraid if Mr. Hughes carries out the suggestion of Dr. Harris and invites his provincial medical examiners to call upon him when in town he will greatly add to his present onerous duties, as apparently about ten per cent. of the medical profession are examiners for the Prudential.

Dr. Hoar: I would like to call attention to two points which Dr. Harris has brought before us, one being the advice which is given by the doctor in the country, as to the eligibility, or not, of the life for insurance. I think the very common-sense remarks of Dr. Vivian Poore rather appealed to us. No doubt if a man recommends a life for insurance, with the addition of a certain definite number of years, it rather hampers our opinion, and it is difficult sometimes to go behind him and alter the recommendations, but there are certain cases in which one can see through the opinion, as it were. Personal equation also may come in, and he may give a definite report favorable, or otherwise, to the individual. At other times family history is an important item with the examiner in his recommendation. I think all those things have to be weighed, and it is rather difficult to go behind a man and refuse the recommendation. But if you know the man who has made the recommendation, I think a certain amount of help may come from it. In the second place a good deal has been said about surgeons and physicians in the large centres, but you must remember that Life Assurance is a very increasing work, and in a great many places

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there is no such thing as a pure surgeon or pure physician. If you find a man has been giving you reports for a good many years which are satisfactory, you are glad to continue his services. At the present moment the education of the medical profession is such that, although they may be surgeons, they are educated up to the capability of being able to report on cases of Life Assurance.

THE CHAIRMAN: There can be no doubt that the suggestions of Dr. Harris are very valuable and are in the right direction. If I understood him correctly, he wants the medical examiner in country towns to send his report direct to the Head Office, and not to the local actuary or the local agent of the society. I should not myself feel that that was courteous to the local man, and I do not see why it should not be sent through him to the Head Office. The intentions of our society are very good, but our society is a young one, and it partakes somewhat of the beautiful and delightful qualities of youth. It wants its own way, and it wants always to reform and reform quickly, and to carry everything forward in a somewhat impetuous way. I do not say anything against the spirit of the society, but I think we must work together with the actuaries and managers, and we must leave them a great deal of latitude to follow their own course, that which they think advantageous to the associations which they represent. By tactful counsel we shall, as medical officers, no doubt enlist their sympathy, and gradually get an improvement in many matters which are of value to the Association, but it appears to me that sometimes we want to lay down our rules and have everything done according to these rules. I do not quite think we are right. We must leave the manager and actuary a great deal of liberty, and leave a great deal of liberty to one another, and not lay down rules which impose so much on such a life. We must leave that to the individual medical men. I think we are all very grateful to Dr. Harris, and to the gentlemen who have taken an interest in the discussion.

Dr. HARRIS, in reply, said: I am very grateful to you, Sir, for the kind way in which you have received my small communication.

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There are one or two points which I should like to refer to. There is the question of hours. As a general practitioner usually has certain hours for consultations in the afternoon, such an arrangement has been spoken of as being more in favour of getting a general practitioner to examine proposers for insurance in the country. But in some of the large provincial towns, as, for instance, in Manchester, physicians have afternoon hours for consultations, and, of course, that is usually convenient for business men. Our hours are between two and four, and we are always to be found in our rooms at that time, and yet you will find that in Manchester the local agents bring it forward as a reason why they have great difficulty in finding a physician at home, that the times do not suit. They have pleaded that against me to one of the Head Offices, when they have been asked why I had not reported on certain cases. They have said that I am difficult to get at, which is absolutely untrue. That leads me to another question which the President has spoken of: the question of courtesy—that it would be wanting in courtesy if the reports were not sent through the branch manager. I quite agree with him provided that you are certain of your man. If you have a perfectly reliable local agent, a good branch manager, there is very little objection to the provincial medical man's report going to him. As I said in my communication, there are men I have the highest respect for, but there are others you could not send your report to with confidence. Take, for instance, the case I cited, which happened in a first-class office with a local manager and a local board of directors.

In conclusion, gentlemen, I am very much obliged to you for the kind way in which you have received my communication, and I am glad to learn that many offices do consult their London medical adviser, as regards their medical appointments in the provinces, but it is certainly true that a large number of offices leave such appointments in the hands of their branch managers.

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ON LIFE ASSURANCE INQUIRIES RESPECTING THE USE OF ALCOHOLIC STIMULANTS.

By **SIR DYCE DUCKWORTH,** M.D., LL.D.;

Physician and Lecturer on Medicine, St. Bartholomew's Hospital; Hon. Physician to H.R.H. the Prince of Wales; Physician to the Law Life Assurance Society, and Hon. Physician to the Scottish Imperial Insurance Company.

Read before the Life Assurance Medical Officers' Association, November 1st, 1899.

SIR HERMANN WEBER, M.D., *President, in the Chair.*

With the exception of the inquiry regarding the tendency to tuberculous disease in any individual presenting himself for Life Assurance, I suppose there is no question of greater importance, or more difficult to find the exact answer to, than that relating to the employment of alcoholic drinks.

There is seldom difficulty in recognizing the indications presented by candidates who obviously indulge freely in stimulants, yet even in some of these instances a good deal of experience is needed on the part of the medical examiner.

In a larger number of candidates, our difficulty is to determine exactly what constitutes a departure from strict moderation in the use of alcoholic liquids.

Not only a large clinical experience, and a wide knowledge of the habits of different classes of people, but, as I would maintain, a personal knowledge of the character, qualities, and effects of different varieties of alcoholized liquors are requisite to qualify us in prosecuting these inquiries. The personal experience, however, of the examiner must not be taken as the absolute guide for action, inasmuch as the effects of various liquors vary much in different individuals.

I am, however, disposed to regard the practitioner who has been a life-long abstainer as probably less well-equipped than others to

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judge quite correctly in all the bearings of this matter, owing to his personal inexperience. Whether this be the case, or not, we may, in respect of this inquiry, apply the *dictum* of the celebrated Parisian clinical professor with respect to the qualification of a practitioner to treat diabetic patients with skill. He remarked that "no one is fit to prescribe for them till he had been at least fifteen years in practice."

My remarks to-night will apply more particularly to cases of what are commonly called "moderate" drinkers, constituting, probably, the largest class in any community of decent people, one which has also a reputation for sobriety and temperance.

With respect to many of these, I have to declare at once that they are by no means moderate drinkers, but that, on the contrary, they habitually exceed the limits which are now recognized by observant physicians and prudent men as permissible and wholesome.

Some Life Assurance Societies have formed their questions on this point in a manner that can only elicit vague and inexact replies. Others, and amongst them my own Society, demand an explicit confession in detail of the daily consumption of stimulants. To elicit this is a rather tedious process, but the outcome of such an inquiry is usually significant, and worth securing. I take the particulars of what Sir Andrew Clark used to call "a day of the candidate's life," inquiring as to early morning, forenoon, noon, afternoon, and evening habits in respect of alcoholic liquids, suggesting, I suppose with some subtlety, the mischievous practices of taking stimulants at odd times between meals. In this way, no loophole for escape is left. The hours and quantities acknowledged are jotted down, and the total is summed up. In no other manner can an accurate idea of the candidate's habits be gathered, and from repeated inquiries of this kind, it is found that numbers of seemingly healthy people thus tell and afford evidence of an excessive consumption of alcoholic liquids which they themselves, and many other people, consider strictly moderate.

We are here in face of the great alcohol question which so much vexes and disturbs many worthy persons. To those of them who know my views on the subject, I am *persona ingrata*, because I

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am a drinker myself and recommend others to drink, and because, further, I have advised that young persons should be taught how and when to drink alcoholic liquors. In this, as in other matters, I am only concerned to state what I believe to be true. I recognize what is known as the "physiological limit" in this question, and I hold that this should not only not be reached, as a rule, but that the daily limitation for a healthy and usefully employed man should be well within it. That lesser quantity, thus sanctioned, I believe to be of value, and to act, in persons with well regulated appetites, in aid of the best service of both mind and body.

Moderation, then, in the sense in which alone I would employ the term, is something very different from that commonly denoted by it. The immoderate "moderation" which I am particularly discussing to-night is most often observed in men from the age of twenty-five to sixty years of age. The excess consists frequently in a draught of beer in the forenoon, whiskey and water late in the afternoon, or during some act of business, and more of the latter, often with as much as four ounces of whiskey, during the evening—all this being over and above the amount consumed at luncheon and dinner. Men who drink in this fashion are always sober, and they would resent and deny any approach to intemperance as commonly understood; but we know that they have exceeded the "physiological limit" two or three times over, and that they will sooner or later have cause to regret their indulgence. I am in the habit of placing such lives at once into the second class, even if there be no overt evidence of any visceral or other disorder.

According to the occupation, environment, and mental attitude of such applicants, they may require extra rating in respect of these habits. Many persons drink in the fashion I have indicated through simple ignorance of the risks they run, and they are often pleased to be warned of the latter, and promise to amend their ways.

I will now briefly refer to the harmful results which may be met with in the immoderate, so-called temperate, drinker of this type. With most observers, I recognize that alcohol, consumed in excess of the physiological limit, especially apart from meals, is a destroyer

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of arteries, and an agent productive of sclerosis of the connective tissues throughout the body. According to the peculiar diathetic habit (tissue-proclivity) of the individual, it produces these effects in greater or lesser degree, selecting one or more organs, or one or more definite lines of tissue, for its manifestation. To some persons, alcohol in any quantity is nothing less than a poison, so sensitive are the tissues to its influence. To others, the most amazing amounts of it appear to be innocent of any malign effects upon the textures. Here, as in so many other instances in medicine, we have to pay heed to the personal equation of the individual we are dealing with.

The manner of life led materially alters the problem, and, no less, the peculiar environment. If a London publican, or a lawyer's clerk in Lincoln's Inn, consumed the whiskey ordinarily taken by a Highland ghillie, they would probably, before the age of fifty, be at the point of death from hepatic cirrhosis. I have, however, yet to hear of the case of a Highland ghillie who came under treatment for a hob-nail liver.

The clearest evidence to my mind of damage done by continuous slight excess of alcohol is the early aging of the person, and the premature decay of the vital powers which are so commonly to be witnessed. A tendency to obesity, which again entails languor and disinclination for bodily and mental activities, is one of the effects. The vascular changes become apparent in small dilatations of superficial vessels, and in progressive arterial sclerosis long before the natural period in which such senile decay may be expected. The hair whitens prematurely. Any proclivity to gout is encouraged, and, not seldom, through errors of hepatic and other metabolism, some degree of glycosuria is apt to occur. The kidneys are not unfrequently involved in the sclerosing process, and indications of insidious interstitial nephritis may gradually supervene. Many of these symptoms accompany the earlier stages of hepatic cirrhosis.

These, then, are the results of alcoholic habits which are honestly, but very erroneously, regarded by most people as within the limits of temperance, and they surely demand consideration at the hands of Life Assurance medical examiners. It would be well,

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indeed, if they could become matters of common knowledge. As I have already remarked, this habit of unwholesome excess in the use of alcoholic liquids is not seldom the result of ignorance, and is practised by persons who have no morbid taste for stimulants. Hence my contention for many years past, that if people are to take alcoholic stimulants, they should be taught how and when to employ them.

Teetotal advocates who resist my plea for the truly temperate use of these agents have declared that the small amount I sanction can be of no use and can afford no gratification, and so had better be altogether dispensed with. I join issue with these apostles, and believe in the value of a truly moderate quantity of alcoholic liquor in some form, consumed with a meal, in no routine fashion, however, but according to the demands of a disciplined appetite. For persons with morbid or irregular craving for alcohol, whether this be inherited or acquired, I prescribe, of course, total abstinence.

As a practical outcome of the foregoing remarks, I will urge for our consideration the following rules of practice in respect of Life Assurance inquiry respecting the use of alcoholic liquors:—

a. That we take care to inform ourselves exactly, or as fully as possible, as to the nature and amount of stimulants taken daily by each candidate, also as to the particular hours in the day when they are consumed.

b. That we try to form as accurately as we can an opinion as to the effects of the candidate's habits on his bodily textures and nervous capacity, having regard to his mode of life, his environment, and peculiar temptations. Family history will further aid us in this matter.

c. That in cases of drinking in the degree of immoderation to which allusion is made in this communication, if there is no prospect of decided amendment of the habits, an extra premium is clearly demanded in view of a premature onset of degenerative bodily changes.

In setting forth these propositions, I am not unaware of the difficulties which beset the inquiries, and the formation of opinions upon the replies gathered from them. I also recognize the special

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difficulty which examiners in the country, and in small towns, must encounter in pushing home these inquiries in the case of neighbours, friends, and, possibly, important patients; and this points very clearly to the desirability of securing reports from thoroughly independent sources in every case. I no less appreciate the delicate task which such a method entails in instituting searching inquiries in the cases of women, many of them, perhaps, highly placed in society, and sometimes hardly condescending to understand, or even pretending to misunderstand, our questions. We all know of the too common resort to stimulants in these days by women who lead unwholesome and luxurious lives, whose overwrought nerves crave for the seductive influence of alcohol and other agents to enable them either to plunge deeper into amusements and inanities, or to bear up against domestic cares and unhappiness, and we take good heed, I trust, of the damage that is thus being wrought, and adequately load such lives when we have to deal with them for Life Assurance. Here again are needed special experience and courage to deal boldly with the revelations we elicit, paying due regard to the marvellous subtlety of the secret woman-drinker, with her honeyed falsehoods, and her self-appreciation. If we thus carry out our duty in regard to these particular inquiries, I believe we shall protect our various Life Offices to an extent that the directors will have no difficulty in appreciating.

Lastly, I will venture to express the opinion that the lives of those who consume alcohol in accordance with the true principles of moderation, as I have defined it, will prove as satisfactory—and probably even more so—as those of total abstainers. No series of statistics in regard to this particular matter, from whatever source derived, which would illustrate the contrary, would, after a long and careful study of the subject, carry any weight of conviction to my mind.

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Discussion.

The President: I am sure that you will all agree with me that our best thanks are due to Sir Dyce Duckworth for his very practical, very suggestive, and very thorough paper, and I invite you to discuss it.

Dr. Symes Thompson: I think the value of this communication is very great indeed. Insurance medical officers are accustomed to deal with great and necessary severity with those cases in which there is marked evidence of excess in drinking, and we are also accustomed to deal with great firmness with cases in which degenerative changes are definitely to be found.

I think the great value of the paper is, that whilst admitting both these points, it regards them from a somewhat different standpoint. I suppose we are entirely at one with reference to the method of dealing with cases of marked excess, in which the habits are so distinctly bad that we cannot regard the case as one to be insured at all. So again we are accustomed to deal firmly with cases in which there is decided evidence of degenerative change. But here we have brought before us to-night a type of case in which it cannot rightly be said that the man is a drunkard, neither can it be said that there is present evidence of degeneration. We are, in fact, called upon to consider in detail the circumstances under which the proposer is living, and to estimate as best we can whether those circumstances are likely to be continued and become disastrous, or whether, either at our own suggestion or from some other cause, the proposer is likely to amend his ways, to reduce his supply, and so to prevent any evil effect. So that we have, as Sir Dyce has truly said, to regard the personal equation, and form a judgment for ourselves, whether those habits which have been habits of excess though not of drunkenness, are so likely to continue as to make it wise to reject the life. There are few things which require more experience and more penetration on the part of an insurance medical officer than such cases as these.

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I cannot but think that the suggestions which Sir Dyce has given are helped by the use of the Form or Table of Questions which this Society drew out with so much care. We should not be afraid of taking time—it is not wasting time—in ascertaining the amount of alcohol consumed, the time it is taken, its effect, and so on, and also we must estimate the mode of life, the occupation, the environment, and the conditions which may or may not render a man able to take a great deal of alcohol without damage. We have, I presume, in the majority of cases, to anticipate that conditions which we may call degenerative are likely to occur at a time perhaps 10 years antecedent to those changes in health. We may, perhaps, assume in one case that a destructive change will take place 10 years earlier than usual; in other cases 15 or 20 years earlier than usual, and with such a mode of estimating it as this, we may be able to assess with justice the addition which should properly be made. We may do wisely, perhaps, in suggesting the endowment system, or a system of payment by a few annual premiums for the consideration of our actuary. I feel we must recognise that there is a class such as that which has been indicated which we cannot rightly refuse on account of the habit or degeneration, but which we must recognise and consider, and if we do so I think that the right course for us to adopt will, as a rule, be to suggest a very considerable extra rating, together with "endowment" or limited annual payments. My own feeling would be as strong or even stronger than that of Sir Dyce Duckworth. I should be disposed to refuse these cases on the ground of habit; you cannot call them drunkards, but you recognise that the habits are such as to be injurious to the textures.

Dr. Theodore Williams: I think in framing the form which is now adopted by a number of offices, this Association anticipated matters by asking the average daily amount of stimulant and various other questions which bind a man to some extent, and occasionally elicit wonderful answers. I remember once a man came to me and said that he was a very moderate drinker indeed, but when I put down on paper what he absolutely confessed to, he was perfectly astounded, and said that he did not drink as much. I said: "But

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you have just admitted it. You said you had so much at 11 o'clock with your friends, then so much at lunch, then two 'goes' in the afternoon, and then some at dinner, and some more after dinner, and, totalled all up, that is it." He said: "I shall reduce my quantity of alcohol." I said: "How are we to be sure of that?"

What I was going to ask Sir Dyce to tell us was, how he deals with those people. At several offices, my own in particular, we are in the habit of dealing with what he called, I think, the "immoderate moderates," as follows:—We treat them like the licensed victuallers. The licensed victualler, it goes without saying, is an immoderate drinker. We never admit for an instant that licensed victuallers will take the same standard of alcohol as other people: it is their business to sell drink, and part of their business appears to be to drink drink. The custom is, I think, to charge £1 per cent. on any of those candidates who confessedly took a little too often, but not too much. I should like to hear from Sir Dyce whether that is the custom in other offices. Now we have got Sir Dyce here, I should like to ask him another question, namely, what he relies on most in the symptoms or appearance of the patient. Perhaps it is a rough method, but whenever I am doubtful about habits, and I find that the liver is in the least enlarged, I advise declining. Why should that man have an enlarged liver? If, in addition to this, he smells a little of alcohol, that quite settles the question in my mind.

With regard to the question of atheromatous arteries and the hardening of tissues, often these are very difficult to detect. Sometimes you certainly do get hints in that way, and of course you take advantage of them. The age question is very important, and I am glad that Sir Dyce mentioned the premature aging of these candidates. When in a drinker I can find no other explanation, I have put the premature aging down to alcohol, and I believe I am right in so doing.

Then there is another class—perhaps I ought not to ask Sir Dyce to give us his experience with regard to that, because he has as yet not alluded to it—and that is, the men who have been drinkers and are supposed to have become total abstainers. They are a most

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difficult class to deal with. My own opinion is that they are very bad lives indeed in the few cases which I have followed out. Dr. Pollock and I, and I think six or seven other medical men, were once called on to examine a certain nobleman who had been a drinker, but, according to his own account, had given up alcohol and drank nothing but Zoedone, and that sort of thing, and I really believe that he had abstained. We all thoroughly examined him, and we found that his liver was slightly enlarged, and there was a history that once some albumen had been found in his urine. But we were all unfavourably impressed with these facts and with the appearance of the man, who did not look as he ought to look. He might have given up alcohol, but if he had, the absence of it seemed to disagree with him more than its use, and it was a question if he had not better have gone on with it. We decided to reject him. I watched that man's career—he died within a year. I venture to ask Sir Dyce if he can give us a little more experience on this point. It is one of the most important subjects with which we have to deal in Life Insurance. The other question, the enquiry into habits, is very difficult indeed, and I do not think that it ought to be left entirely to the medical men. As a rule, I believe, the actuaries and the officers try to do a great deal themselves, but as for the system which is sometimes pursued of going in for reports of detectives, I strongly object to it. I see it done, but I do not approve of it, because it means that each of these unhappy individuals is dogged, he is watched going into a public-house and everywhere. In conclusion, I compliment Sir Dyce Duckworth on his excellent paper.

Dr. de Havilland Hall: Apart from the question of alcohol and life assurances, Sir Dyce has raised perhaps even a larger question, namely, the influence of alcohol generally on the well-being of the individual, and consequently upon the well-being of the State. I do not know whether I shall be departing from the objects of the Society if I make a few remarks on this question, because he brought it forward so very prominently; and, sanctioned by the high position he holds in the profession, I think someone should get up and in some respects challenge that opinion.

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Speaking with a small amount of experience on the subject, I am inclined to think that the total abstainer certainly has the better of it in regard to the question of life and health. From the Life Assurance point of view, the abstainer who has been an abstainer from his youth—not a converted drunkard—is the kind of life I prefer, and I certainly recommend this life with a greater amount of security than that of a man who is a moderate drinker. One never knows what moderate drinking is. Then as regards the question of statistics: we never shall have statistics of any value between the total abstainer and the moderate drinker. We can easily get together a group of total abstainers—that is not the difficulty—but the question of moderate drinking, who shall define it? We cannot do it. The statistics of our Life Assurance offices would be of no value whatever on that point. Therefore, when we see the position held by total abstainers in various offices who have a separate class for themselves, and compare it with the position held by the moderate drinkers, of course everything is in favour of the total abstainer, because the ordinary class includes those who drink moderately, and also those who drink immoderately. Sir Dyce's suggestion that it is desirable that people should know how much to drink and what to drink, reminds me of the advice given by the father of Sir Philip Sidney to his son:—that in order to go through life pleasantly and comfortably, he should be accustomed to drink a certain amount of wine, so that when he mixed in society he would not be likely to be caught unawares by taking more than he knew how to drink with impunity. I suppose Sir Dyce would suggest that our sons and daughters should be advised to drink a certain amount of alcohol in order to carry out the suggestion of Sir Philip Sidney's father. Speaking as the father of a family, I should certainly say that school boys ought not to drink alcohol in any form unless there is some special reason known to medical men. I think myself that women are better without alcohol, with a few exceptions of impaired digestion, and therefore, when women come up to me for life insurance, I am particularly careful in getting from them exactly the quantity they drink. In other lives, unless there is something about the individual which leads me to suspect, either

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from his occupation or his appearance, that he is likely to drink in excess, I am content with a more general enquiry. If I have any doubt in my own mind, I pin him down definitely to the quantity of alcohol and the time at which he takes it in the day.

Then the age at which applicants present themselves for assurance is important. A man of over 40, even if he drinks somewhat in excess, providing his organs are sound and his vessels not rigid, might be taken safely for assurance, whereas a man of 25 drinking the same amount, I, at all events, would condemn at once. I am in the habit of pointing out to my directors that it takes a good deal of hard drinking to kill a man over 40 with alcohol, whereas the same amount of alcohol in a younger person would soon prove detrimental. I think, too, that we ought to lay great stress upon the kind of alcohol indulged in. We all know that spirits have a different effect upon the tissues from beer. Spirits as a rule lead to cirrhotic changes, whereas malt liquors generally lead to fatty degeneration. I think one can generally see whether a man has been addicted to spirit drinking or to malt liquor.

Occupation, of course, is a most important element. That has been discussed by Sir Dyce. A city clerk who drinks even comparatively moderately, is a more or less risky life, whereas a man of the same age engaged in open-air work—such as farming—may drink an equal amount with impunity. I think there is no doubt that exercise in the open air enables people to work off excess of alcohol. Dr. Theodore Williams said that all publicans drink. Well, quite recently I had under my notice a licensed victualler who had been a total abstainer for 25 years—quite from youth. That is possibly the exception that proves the rule, but I thought I might as well mention it. Though I am hardly in accord with my old teacher in his views about alcohol, I have been much interested in the paper, and I certainly think that he has done good service to the Association by bringing forward prominently the conditions which would lead one to reject or rate up lives in which alcohol has been abused.

Dr. Hingston Fox: I agree with Dr. de Havilland Hall as to the greater security of the lives of total abstainers, and I think that

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statistics of value upon this particular point can be brought forward. In an office which I advise—the United Kingdom Provident Institution—there is a very large constituency. We have two departments, one for those who abstain, and the other for those who do not. The two departments are treated in exactly the same way, and the same general standard is used in regard to the acceptance of good lives. I need hardly say that anyone who showed signs of intemperance would not be admitted at all. The experience of this office has been, through a long course of years,—in fact from its first institution—that the mortality in the department of abstainers is uniformly at a much lower rate than in that of non-abstainers. If you like to make the comparison between the mortality of the abstaining section and the mortality of the entire office, the disproportion will still be greatly in favour of the abstainers. Certainly many things have to be taken into account in considering such statistics. Those who enter in the abstaining class are no doubt a careful lot of men; men leading sober, regular, and quiet lives, men who in other respects, besides that of abstinence from alcohol, exercise self-control. The question of transfers from one department to the other affects an infinitesimal number of lives, and may be safely neglected. Making all the allowances you may, you still have a greatly lessened mortality in the abstainers' class, which cannot be explained away. I think this affords strong *primâ facie* evidence for Dr. de Havilland Hall's view, that an abstaining proposer is a better life for insurance purposes.

Then I must humbly protest against one opinion which Sir Dyce Duckworth expressed, that a medical examiner who was a lifelong abstainer was not so well qualified to form a judgment upon the alcoholic habits of a proposer as one who himself took alcohol. I do not know whether there is any other abstaining medical officer of a life insurance company present here but myself, but I submit that the experience by which we judge these cases is derived from our observation of men in general, observation which comes to us every day in countless forms in medical practice, rather than from experience gained in our own persons. Whether it be a question of alcoholic habits, or of liability to any form of disease, or any con-

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dition which may bear upon the value of a man's life for assurance, our opinion is based, as I contend, much more securely upon our observation of others than it could be upon our own personal and subjective experience. Therefore, with all respect to Sir Dyce Duckworth's authority, I beg to express emphatic dissent from his opinion on this head.

With regard to the question of occupation, there is a certain leakage which occurs to Insurance Companies on account of men who enter under one occupation, and who afterwards change this for another which involves greater risk. In the course of the examination of about 1800 death claims, I have noted 20 instances (probably a few more may have escaped notice) in which persons who entered as commercial travellers, pork butchers, boot-makers, grocers, van proprietors, etc., died, as their death certificates showed, in the occupation of a licensed victualler, or as the wife of a victualler. Of these 20 cases, eight died between the ages of 40 and 50 years; seven between 50 and 60; four between 60 and 70, and only one died over 70 years of age—at the age of 71 years. Two of them, as the certificates stated, died ostensibly of alcoholism, five of cirrhosis of the liver, one of enlarged liver, one of kidney disease, one of diabetes, one of gastritis, three of brain disease, one each of bronchitis, hæmoptysis, heart failure, tumour of the pancreas, diarrhœa, and suicide. At least one half of these returns, probably two-thirds, strongly suggest alcoholism as the primary cause of death. Thus the leakage by premature death from this source is important. A licensed victualler is in my opinion hardly eligible for acceptance on any terms. He is not accepted in the office just alluded to. It would, I think, be worth considering by our actuaries, whether a clause might not be put into life insurance policies, stipulating for a high extra rate if the occupation of a licensed victualler were entered upon.

Whilst thanking Sir Dyce Duckworth for his valuable paper, I am afraid that he has been unfortunate in the total abstainers he has met with. He puts us down as a fanatical sect. I should like to convince him that there are some total abstainers whose minds

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are as open as those who drink alcohol to the consideration of all subjects bearing upon life insurance.

Dr. Pollock: I join in thanking Sir Dyce for the very practical paper he has brought before us. This is a class of case which is before us every day. We can recognise the confirmed drunkard and get rid of him, but this form of intemperance is difficult to recognise, and therefore it becomes us as practical men to examine with care our means of appreciating these cases of moderate drinkers, whom we know to be in excess of physiological rule, and whom we do not suspect of being confirmed drunkards.

I would, therefore, entirely approve of the personal examination which Sir Dyce proposes. My own habit has for a very long time been to ascertain both the quantity and the quality of the drink taken, and if possible the time of the day at which it is taken. Your day-drinker, your tippler, who is always at it, has his whole system loaded with alcohol, and is a much worse life than a drunkard who only breaks out two or three times a year. Therefore I should recommend the habit of asking, as I do myself at my own office, both the quality and the quantity of liquors taken.

Then there is another point which may make some of you smile. How do you approach your proposer in getting from him when he drinks and what he drinks? We all experience that difficulty. It won't do to have a man in the chair and say abruptly "How much do you drink? Do you drink whiskey?" Well, he rebels; he does not like that kind of thing. For my part, I approach him delicately. I find out, as Sir Dyce has suggested, his occupation—is he a town man or a country man? If he is a country man, does he play golf or cricket—does he hunt—does he belong to a club—what are his habits? I fully appreciate the point that the man who examines should know something about the habits of society, and the habits of drink, although not himself a drinker. I am myself precisely in that position. I take one glass of brandy once a day, no wine and no beer. I take it at the evening meal. If I dine out I take its equivalent, perhaps one glass of wine. I am, therefore, not a teetotaler. Having made out what the proposer is, and how

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he spends his time, you can generally by conversation ascertain something of his habits of drinking. If you are familiar with clubs he will tell you something confidential perhaps—you can get it out of him. I have long practised this. I get round my man. I do not appear shocked when he says that he has a whiskey at 11 o'clock every morning, or feels a certain emptiness at 4 o'clock. I do not appear shocked, I go on.

With regard to a remark made by Dr. Symes Thompson as regards the total abstainer who is a reformed drunkard, I do not believe in him at all. There is no such thing. Some years ago in a little book which I published I said that I did not believe in reformed drunkards. The consequence was that temperance journals all fell foul of me, and said I was quite wrong. But which of us has seen the reformed drunkard? I have seen one, and I will tell you how we reformed that case. She was a lady—husband in the city—she lived in a country house about 10 miles from London, husband in the city all day—no children. I was called in in consultation on account of fits, which were presumed to be epileptic or otherwise—in fact, she fell on the floor trying to get upstairs. We found out it was drink, and nothing but drink. We had in her lady's maid, and got her to acknowledge, then and there, that she had bought drink for her mistress. How did we reform that lady? It is the only case I ever saw reformed. They were rich people, and we found a lady who, I think, got £400 or £500 a year for it, to live with this lady and watch her and never leave her. When they went out in the carriage they never stopped at any place where brandy is to be had, and in that way we cured her. As I have known the family for 14 years since, I believe it was a cure.

I think the suggestions in the paper are exceedingly good, and we ought to watch those cases as likely to furnish a large number of claims. They are unsuspected claims, because the proposer may at the time not present the signs which appear to warrant us in protecting the office. The evidence about habitual drink is of two kinds. One is the personal evidence—that is, you have a man in the chair and want to find out if he drinks: you have asked all your questions; what else is there? There are flushings, a some-

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what tense pulse, a nervous manner, and very often a shaking hand if not a shaking tongue, and there is a certain sub-excitement about him. Perhaps he has had his dram, or perhaps he has forgotten it that morning, but at all events it is there, and we may very often suspect although we cannot prove. There is another point of evidence to be had, and that is to send a paper to friends and say, "Is he a drinker? Has he always been sober?" We know what that brings back—it brings back "No," and never "Yes." I do not value that evidence. I do not believe in those friends, nor in the country agent who is interested in the commission, who insists that the proposer is a most estimable man, and known as sober and temperate all through the county. I do not believe in them. But I have tried a plan which I daresay many of my colleagues have practised. I either write a letter myself or request the office to send a written letter to the friend, requesting private information as to habits. It is not a printed form. To the printed form he answers "Yes" and "No," and dates it and posts it. Instead of that we get the friend to write a detailed reply if possible. In cases of large amounts that should always be done. I think that is the best way of obtaining information from friends.

Mr. George King: I must first of all thank you, Mr. President, and my friend, Dr. Glover Lyon, and the Society, for the privilege you have given me in allowing me to attend at this meeting, and for your hospitality. It has been very interesting to me, and although the discussion has taken a turn which I did not anticipate, I feel that it has been most useful to me personally to have heard it. I feel, however, that it has taken such a turn that it is a little difficult for me to make any remarks.

The first thing that occurs to me is the extreme difficulty of getting any trustworthy figures bearing upon this question. That has been pointed out by more than one speaker to-night, and as a statistician and not a medical man, I can amply confirm it. As a matter of fact, the more one has to do with figures, the more one in a certain way gets to distrust them, although one must add,

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the better use one can really make of them. In this particular direction we have no means whatever of getting at trustworthy figures, and we must go to a large extent upon surmise. Reference has been made to the statistics of companies which have the two classes of policy holders, the total abstainers and those whom we will call moderate drinkers, and it has been stated (which is quite true), that figures furnished by those companies seem to show a very much better life for the total abstainers than for the other class. I will venture, however, to remark that it does not necessarily follow that it is total abstinence which makes the one class so much better than the other. It may quite well be that those who are particularly vigorous in health, and in other respects live well and take care of themselves, do not to the same extent feel the need of alcoholic stimulant, and do not touch it. Therefore it may be the good health of the class that conduces to total abstinence, rather than total abstinence that conduces to good health. I think that is one way of looking at the subject that is well worth considering, although I cannot say that there are any figures which can support it.

There is another difficulty about these offices, namely, transference from one class to another. I cannot help thinking that it frequently happens that when a man loses his health, gets a little weak, he takes, perhaps by a doctor's recommendation, a little alcohol, and he is perforce carried out of the total abstinence class into the other. It is only when he becomes not so strong as he has been that he gets transferred into the ordinary class, and that tells unfairly as between the two classes. I do not say that is so, but I do say that the offices have never published the manner in which they discriminate between the mortality of the two classes, and, although I have no doubt that it is done conscientiously, yet I cannot say that I entirely trust anything unless I know exactly how it is done. I had a little experience of that myself, because I was—and I may say I am—consulting actuary to a great Colonial Institution which for political reasons established a total abstinence class. The first valuation after the class was started gave the ordinary class a very substantial bonus, and the total abstinence class none. That was

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not due to the mortality, but due to the class being a young one, and the age distribution being different, and the expenses necessarily higher. This shows one of the fallacies that have to be guarded against.

The result so dissatisfied the total abstainers that it was arranged to amalgamate the two classes for all purposes except that of mortality: to give each class its own profit from mortality, but let all the other incidents be borne proportionately by the two departments. The result has been that at the three valuations which have since taken place, there has never been any appreciable difference between the two departments, and such difference as has existed has sometimes been on one side and sometimes on the other. I cannot help feeling myself personally that some total abstainers, I do not say all, might be none the worse, and would probably have a longer life, if they took a small amount of alcohol. I was very pleased with what Sir Dyce Duckworth said: it seemed to me to be so entirely moderate and reasonable, and I do not like extremes on either side. How statistics in these matters may be misleading I do not require to say, but I have here a very amusing little card which I will hand up to the President for inspection. It is the advertisement of a well-known firm of distillers, and it gives the average age at death of various classes of the community. It shows that the total abstainers have an average age at death of 51 years and a few days: the habitually temperate drinkers 63 years and a few days; the careless drinkers 59 years and a good many days; and the free drinkers 57 years and 59 days. That is intended to show that those who drink the whiskey will have a longer life than those who are total abstainers. I have every reason to believe, although it is not so stated on this card, that these figures were derived from an investigation by medical men—the Collective Investigation Committee of the British Medical Association. I do not find fault with the medical men at all, but at the same time, according to my view, they went on the wrong line. They took the average age at death, and did not consider the living, and to avoid this fallacy is one of the very first lessons given to budding actuaries. I was lecturer to the students of the actuarial profession for many years, and one of the very first lessons I pressed upon

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them was that in dealing with life assurance statistics they must take both the living and the dying, and not only the living or the dying. You must compare the two in order to get trustworthy results. That is exactly what we cannot do in the matter of temperance statistics, because we do not know the numbers of one compared with the other.

In conclusion, I may say this is a most important subject, and those of us who have to look over the death papers of a great many cases know only too well how important it is. We get very few deaths certified as due to alcoholic excess, but we get a great many due to cirrhosis of the liver, and kidney disease, and various diseases of that kind which we are perfectly certain have been produced by alcoholic excess. One gentleman suggested the desirability of putting a clause in the policies making an extra premium payable in the event of the life assured entering upon the alcoholic trade. That, I venture to think, is putting back the hand of the clock, and I do not see, as one who is responsible for the management of a life office, how that can be done. The whole tendency at the present time is to make our policies indisputable from the outset. We must guard ourselves at the beginning, and we trust to our medical officers to look after our interests; but once a policy has been issued it must be unchallengeable except in the case of fraud. After all, the figures brought forward to-night to prove the desirability of such a clause seem to me to go the other way. They only show that 1 per cent. of the lives assured subsequently enter upon this dangerous occupation. That is a small number. The offices gain a great deal more by having the policy advertised as indisputable than they would by getting the trifling extra premium on a very few cases. It is not worth while discussing such a point, because it is impossible to carry it out. The same thing happened with regard to foreign residence and travel. Where a life is not likely to go abroad to unhealthy places, it is now the custom to give a whole-world policy from the outset. Personally I would exclude from unconditional policies such lives as those of butlers who may possibly become licensed victuallers, but they are a very small class.

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Dr. Heron: I think Sir Dyce is very much to be congratulated on the reception accorded his paper to-night, and on bringing before us so very practical a question, and on eliciting so good a discussion. The difficulty we all have to face, most of all in our ordinary avocation as medical advisers of Life Assurance offices, is the difficulty of knowing when a man is really moderate in his use of alcohol. I have found the greatest difficulty in coming to any satisfactory conclusion in dealing with this class of applicants for Life Assurance. What is moderation to one man, is very far from being moderation to another. To take an historical instance. I have it from a man who, I understand, is regarded as one of the highest living authorities on all things pertaining to the naval career of the great Lord Nelson, that Lord Nelson used to recognise it as a fact that he would be distinctly affected by alcohol, though in very slight degree, when he had finished his second glass of wine. His *valet* used to present his arm to Lord Nelson after the second glass of wine had been drunk, and intimate that it was time for the Admiral to go to bed. Lord Nelson was then in the habit of leaving the dinner-table, knowing very well that if he remained a little while longer and joined in the festivities—which were more common then than they are now—he might possibly not have perfectly preserved the dignity becoming to an Admiral. That is one case. I know another case, in my own experience, of a man once well-known at Pembroke as "Fighting Tom Evans." He died when he was over 80 years of age. He had worked at Pembroke Docks in the days of the great French War; and it was notorious—I heard it from people who knew him well—that he was often found helplessly drunk in the ditches, and on the roads round the neighbourhood. As a young man he often earned, he told me, 20/- a day by working in the prizes brought in by the privateers and men-of-war, and which were to be made ready for the service of this country. I saw that man myself when, according to his own statement, he was over 80 years of age, and a more hale, hearty-looking man I have very seldom seen. Of course, these two instances illustrate the two extremes; and we have everything between the two. Is there any rule we can apply in our every-day work? I think there is. When a man is in

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the habit of taking "nips" in the forenoon, or in the afternoon, no matter whether the quantity be small or large, that man is in a bad way, and I think we should regard him as a life that ought to be loaded, no matter how very correct his history of sobriety may be, up to the time we have to deal with him. I do not think a man who drinks, especially a man who drinks spirits in the forenoon and afternoon, is one whose prospects of leading a sober life are at all good. I think it would be useful if this Society were to express its opinion that this view might be made a suggestion for the every-day guidance of medical officers of Life Assurance Societies. I do not know any rule to which I should look for guidance in my every-day practice, when persons regarded as moderate drinkers come under my notice as proposers for Life Assurance.

Dr. Glover Lyon: I should like to ask Sir Dyce whether I am right in supposing that he really intended to suggest the founding of a class of insured consisting of those who take more alcohol than they should do. At the present time I think that the custom is that, if we suspect a man's habits, we refuse him. Such a class would be of enormous use, no doubt, if it were possible to found it, but I only want, from a practical point of view, to know whether Sir Dyce really wishes that such a class should be founded. I should also like to know the views of members as to the wisdom of such a procedure, and the possibility of doing it.

The President: I think Sir Dyce must be very much gratified at the most interesting discussion which he has elicited. I will now call upon him to reply.

Sir Dyce Duckworth, in reply, said: My first duty is to thank you for the very interesting and useful discussion of my short paper. That is chiefly gratifying to me because I think the discussion is worthy of the subject, which is a most important and burning one. I have for many years taken a strong interest in what are called temperance matters, and I think we may congratulate ourselves to-night that we have not degenerated into a sort of

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professional temperance society, but have looked at this very important question from the point of view of physicians, and given it the judgment of men of level heads, who have strong opinions on true temperance, founded on facts, attained by actual observation, without letting any sentimentality, or passion, or prejudice enter into it: of men, therefore, whose opinions should be of great importance to the cause of truth and for the benefit of all humanity.

I have sought to call attention to a class of cases which occur only too frequently, in which people who have the character of being sober and temperate, and most proper and upright members of society, are in the habit practically of indulging in a form of alcoholic intemperance which they do not themselves recognise, which their friends do not recognise, and which I am afraid many professional men among ourselves do not sufficiently recognise. We all come in contact with such people; they are generally good-natured, happy, and hilarious, though not robust. We lament their habits, and would fain remonstrate with them. We grieve to see them going on in their folly, taking alcohol at odd times unnecessarily, and doing, as we know, shocking damage to their textures. A large number of these people come up for insurance every day, and I imagine that the majority of them pass as first-class lives, or at all events as second-class lives, without being in any way loaded. What I wished to call attention to was the recognition of that class of case. It is one which does not present the signs in the ordinary way of intemperance; one does not detect in them the alcoholic breath, there are not the tremors, or the enlarged liver. We know that, according to his habits and personal equation, this type of drinker may resist organic mischief for a longer or shorter time, but in 99 per cent. of the cases the damage will come sooner or later, and the life will be curtailed. The question is, what are we to do with lives of that character? I at once put these cases into the second-class, and then, having regard to the kind of man—to his nervous system, to his habits, to his position and occupation—more or less load him, and I recommend you to do so.

It is obvious that no definite rule can be laid down to deal with

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drinkers of this class. Each case must be met as it comes on its own merits. But what I have desired to call attention to is, that such a class of cases exists which requires recognition, but which is probably not fully appreciated, especially in the country. Some country practitioners do not very often examine patients for Life Assurance, and the difficulty, as I have said in my paper, is of course very great in the case of country people examined in country towns and villages, who are well-known to the doctors who examine them, who perhaps belong to the same club, and who meet every day. Perhaps they do not press their inquiries so closely as some of us, or else the habits of the examinee do not make such an impression upon them as they would upon us who, independently, look more seriously upon the matter here in the metropolis.

A question has been pointedly put as to the position of total abstainers, and I perhaps ought to confess that my experience, which is not small, of teetotalers has not on the whole been favourable. I should be sorry to make any remarks which are unpleasant, but I am here to say what I think and believe to be true, and if I am wrong I am willing to be convinced. My experience of teetotalers is largely derived from the observation of men who once drank quite moderately and properly, and for various reasons, abolished these habits. When such men have taken to water-drinking, the majority of them, in my experience, have in some way, more or less, gone wrong. They were quite temperate, and they gave up the little alcoholic liquid, the two tablespoonfuls of brandy, or one glass of claret; they changed their way, and became worse men, prejudiced men, less level-headed, and less useful. They became obese, or they lost weight, grew pale, flabby, and had a less good standard of general health. Some became intemperate in the use of tobacco. My experience is that when those men resumed a little alcohol, on medical advice, prudently and seriously given, their mental and bodily health has improved. Of converted drunkards, we all, of course, think badly for Life Assurance purposes. With the teetotaler from his birth I have had little experience. Of those men I think somewhat better. But what I meant was that from our point of view as medical officers for insurance offices, it would

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be well if we had the experience and personal knowledge of those different alcoholic drinks which are used by the great mass of humanity around us. A physician who has been an abstainer all his life stands out as an exception among people who are living in quite a different way. If he has been an honest teetotaler all his life, he does not know the taste of wine; he cannot tell good wine from bad, he does not properly understand the effects of different varieties of alcoholized liquors, and therefore he cannot quite judge in this matter with an unprejudiced mind. Very often not medical men only, but the laity, talk unwisely on this subject, and regard a simple French wine as if it were powerful rectified spirit. I maintain from long experience that, as a rule, the soundest and most useful, the best, happiest, and the most agreeable man, is the one who drinks a little at one time in the day when he has done his work and earned that little. No statistics to the contrary will alter my opinion.

I quite agree with Dr. Heron's remarks. I think that the habit of spirit-drinking in the earlier part of the day is a most abominable thing, and to be strongly condemned. Any man who so drinks is on the downward grade. If any man confesses to this, I think we are bound either to decline or heavily to load him. It is drinkers of this class who have a character for moderation who bring disgrace upon us who drink temperately.

Life insurance is increasing steadily all over this country, indeed all over the civilised world, and if we can let it be known that we, as examining physicians, are going to put our mark severely on those who give way to alcoholic intemperance of the degree I have alluded to to-night, I think we shall aid in some degree in checking the abominable misuse of strong drinks.

If, however, we are to mark such cases as those I have alluded to, we must do so long before they pass into conditions which we recognise as due to mischief already done. They must be heavily loaded in the early stages, and in that way we may materially help our Assurance Offices.

I thank you again for the kind attention you have given to me.

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